INTERNATIONAL ABSTRACTS

Effects of structured home-based exercise program on depression status and quality of life in burn patients

This study, conducted in the Wound and Burn Treatment Department of the University of Health Sciences, Dr. Lütfi Kirdar Kartal Education and Research Hospital in Istanbul, Turkey, examines the effects of the department’s home-based exercise program on depression and quality of life for burn patients. Thirty burn patients voluntarily took part in the study. The Short Form-36 (SF-36) was used to evaluate quality of life, and the Beck Depression Inventory (BDI) was used to assess depression status. A clinical physiotherapist put together a three-week, home-based, exercise program on the day the patient was discharged from hospital. Results showed a statistically significant difference between BDI and SF-36 scores before and after the program. BDI scores decreased afterwards, while SF-36 scores increased. The authors conclude that structured home-based exercise programs have physical, social and psychological benefits for burn patients.

Yurdalan SU et al.
Burns, 44(5): 1287-1293, 2018

Experiences of guilt, shame and blame in those affected by burns: a qualitative systematic review

This systematic review looks at experiences of guilt, blame and shame over the lifespan of people affected by burn trauma. The databases Pubmed, Scopus, EMBASE, CINAHL and PsychINFO were systematically searched, and 230 papers were identified: 18 of these met the study’s inclusion criteria. Guilt and ruminations of guilt, blame attribution and shame, and body image were found to be pivotal factors across the lifespan of burn survivors and their families. Accounts presented suggest that burn injury has a personal, cultural and societal impact on the lives of survivors and family members. The findings of the literature search and the post-burn experiences described in this review reveal that there is a gap in the psychological care provided for burn survivors and their caregivers. This is specifically relevant around issues of parental guilt and blame, ruminations of guilt and shame as well as body image. The authors conclude that management of these issues currently falls short of delivering comprehensive post trauma care, and they underscore the need to identify psychosocial problems in order to ensure positive outcomes for burn survivors.

Kornhaber R et al.
Burns, 44(5): 1026-1039, 2018

Assessing the feasibility of implementing low-cost virtual reality therapy during routine burn care

While virtual reality (VR) has proved to be an effective adjunct to pharmacological interventions in reducing pain, much of the research that has demonstrated its efficacy in burn care has involved expensive and extensive technology. Thus, in this mixed-methods study the authors assessed the impact of a low-cost VR intervention for burns. Their objective was to evaluate key stakeholder (i.e., patients, providers) perceptions of feasibility, acceptability and effectiveness of low-cost VR technology during routine burn care for adult patients. Ten adult patients used VR during dressing changes in an outpatient clinic setting, after which they completed a satisfaction survey and individual qualitative interview. Providers also completed a satisfaction/perception survey after each participant’s treatment. Quantitative and qualitative results from both patient and provider perspectives consistently supported the feasibility and utility of applying low-cost VR technology in this outpatient burn clinic setting. Special considerations (e.g., aspects to consider when choosing an apparatus or application) stemming from stakeholder feedback are discussed.

Ford CG et al.
Burns, 44(4): 886-895, 2018
The value of WhatsApp communication in paediatric burn care

The aim of this study was to review the use of WhatsApp to facilitate paediatric burn injury consultations in a regional burn centre in the Western Cape province of South Africa. A retrospective review was undertaken of all consultations using WhatsApp over an 18-month period. The origin and nature of the telemedicine requests for advice, transfer or follow-up were collected, along with data relating to the demographics of the patients, the aetiology, mechanism and extent of burn injury. The authors then assessed the impact of this system of communication in terms of reductions in admissions and clinic visits, and a cost analysis was undertaken. 838 communications occurred during the study period, which included 1562 distinct clinical queries. 486 interactions (58%) originated from within the hospital, and 352 (42%) from outside the hospital. Queries related to the full spectrum of burn care, including emergency management and stabilization, triage and transfer, the need for escharotomy, fluid resuscitation, wound care, the timing and nature of surgical intervention, as well as follow-up and rehabilitation. While no significant changes in the number of surgical interventions or admissions were observed when compared to five years earlier, outpatient visits reduced significantly during the study period. Moreover, it was estimated that over 150 unnecessary admissions were avoided as a result of the triage made possible by WhatsApp, which translated into considerable cost saving for the centre. This study advocates the wider application of WhatsApp for burn care referrals, especially in developing countries.

Martinez R et al.
Burns, 44(4): 947-955, 2018

Are we headed for a shortage of burn care providers in Canada?

Studies in the United States and New Zealand found a need for more burn surgeons, and anticipated a severe shortage in the future. The aim of the authors of this study was to describe the current active workforce of burn surgeons in Canada and forecast possible shortages in the future. Burn care providers were identified from each metropolitan area across Canada. A questionnaire from a previous study was modified and distributed electronically via SurveyMonkey™ to representatives from 26 centres. The response rate was 100%. Four of these centres self-identified as providing dedicated burn care, 19 identified themselves as being integrated into surgical programs at their institution, and two stated they no longer treated burn injuries. The mean number of acute burn admissions per year was 67.2 (range 2-290). Among the centres admitting over 75 burn patients per year, 44% (4/9) are currently looking for a surgeon, 56% (5/9) will be looking for another surgeon in five years time, and 44% (4/9) are having or feel they will have trouble finding a surgeon to manage burns. The authors conclude that Canada is facing a shortage of burn care specialists similar to other developed nations. Active mentorship of surgical trainees is essential to maintain the delivery of high quality burn care in Canada.

Vrouwe SQ et al.
Burns, 44(4): 1000-1004, 2018

A survey of temperature management practices among burn centres in North America

In this article the authors describe the results of a survey, conducted in the United States and Canada, on core temperature goals in the operating room (OR) and the methods used to achieve and maintain these goals, along with current methods of warming in the intensive care unit (ICU), the perception of effect of increased ambient temperature on work performance, and concerns with contamination of sterile fields due to increased ambient temperature. A 24-item survey included questions on demographics, target core and ambient temperatures, warming methods, and beliefs on ambient temperature effects. 121 burn centres were contacted, and 52 completed questionnaires were returned (43% response rate). The majority of centres targeted a core temperature of between 36 and 38°C in the OR and an ambient temperature of between 75 and 95°F in the ICU. The most common methods for maintaining core temperature included warmed ambient temperature, forced air devices, and intravenous fluids. Although the majority of centres held the belief that increased ambi-
ent temperature benefits patients, many also reported that this has a negative impact on staff performance and the risk of staff perspiration contaminating sterile fields. A prospective observational study is needed to determine actual temperature regulation practice patterns and their impact on outcomes.

Pruskowski KA et al.
J Burn Care Res, 39(4): 612-617, 2018

How does SCORTEN score?

The toxic epidermal necrolysis-specific severity of illness score (SCORTEN) was developed to predict mortality in patients with Stevens Johnson syndrome/toxic epidermal necrolysis (SJS/TEN). Several studies have attempted to assess the accuracy of SCORTEN, with mixed results. The objective of this study was to compare predicted and actual mortality for patients with SJS/TEN admitted to a single high-volume burn centre. The study included 128 adult and pediatric patients admitted with biopsy-confirmed SJS/TEN between February 2008 and February 2016. SCORTEN scores were calculated on days 1 and 3 of admission. The primary endpoint was predicted vs. actual in-hospital mortality. Secondary endpoints included the association of SCORTEN, as well as individual components of SCORTEN, with hospital length of stay, length of stay in the intensive care unit, and in-hospital complications. Mean age of the patients was 44.5 years, 40.6% (n = 52) were males, and 50.0% (n = 64) were Caucasians. The median TBSA was 12.25% on day 1 and 25% on day 3. The median SCORTEN at admission was 2 (interquartile range: 1–3.5). There were a total of 20 deaths (17.2%). SCORTEN exhibited good discrimination (c-statistic = 0.83, 95% CI: 0.75–0.91) and performed directionally as expected, although a low but non-significant standardized mortality ratio (75.3%, P=.164) and Hosmer–Lemeshow test of borderline significance (P = .088) make the model’s fit unclear. The accuracy of the SCORTEN model in predicting mortality for SJS/TEN patients treated in a burn centre remains unclear. This study may encourage future multi-centre studies to further clarify its predictive ability, and enhance future investigation into the use of a reformulated or reweighted SCORTEN.

Zavala S et al.
J Burn Care Res, 39(4): 555-561, 2018

Biobrane™ versus Acticoat™ for the treatment of mid-dermal pediatric burns: a prospective randomized controlled pilot study

The management of pediatric mid-dermal burns is challenging. Anecdotal evidence suggests Biobrane™ (UDL Laboratories, Inc., Sugar Land, TX) may expedite epithelization, reducing the need for skin grafting. The authors conducted a prospective, randomised controlled pilot study, comparing Biobrane™ to Acticoat™ for mid-dermal burns affecting ≥ 1% Total Body Surface Area (TBSA) in children. Mid-dermal burns were confirmed using Laser Doppler Imaging within 48 hours of injury. Participants were randomized to Biobrane™ with an Acticoat™ overlay, or Acticoat™ alone. There were 10 participants in each group. Median age and TBSA were similar; 2.0 (Biobrane™) and 1.5 years (Acticoat™), 8% (Biobrane™) and 8.5% TBSA (Acticoat™). Use of Biobrane™ had higher infection rates (6 children versus 1) and more positive, although not significant, wound swabs (7 children versus 4). Healing time was shorter in the Biobrane™ group, though this was not significant (19 days versus 26.5 days). Median dressing changes were similar (5 versus 5.5). Skin grafting requirement was greater in the Acticoat™ group (7 versus 4 children) and similar in %TBSA (1.75% TBSA). The authors conclude that the use of Biobrane™ for mid-dermal burns in children may be associated with increased risk of infection but appears to decrease the time to healing and therefore the need for skin grafting when compared to Acticoat™ alone.

Hyland EJ et al.
Int J Burn Trauma, 8(3): 63-67, 2018

Use of vascular clips to approximate skin grafts on the burned hand

Burns on the hands are common and can lead to significant functional and aesthetic impairment. Traditionally, sutures or staples are used to approximate adjacent skin grafts on the hand. The authors of this article, however, found that vascular clips are a suitable alternative. They report a series of three patients on whom vascular clips were used to approximate

Zavala S et al.
J Burn Care Res, 39(4): 555-561, 2018
adjacent skin grafts autografted to treat full-thickness burns. The patients presented with full-thickness burns involving the hands. Vascular clips were used to adhere adjacent skin grafts to the dorsal surfaces of the hands. Two patients had suffered burns on both hands. In these cases, vascular clips were used on one hand while sutures or staples were used on the other hand. One to two months post-reconstruction, satisfactory functional and aesthetic outcomes were observed in all three patients. Regarding the patients who had burns on both hands, the results achieved with skin grafts approximated with vascular clips and with traditional methods were similar. The authors conclude that using vascular clips to approximate skin grafts on the hands is a simple and effective method that results in satisfactory functional and aesthetic outcomes.

Payne RM et al. 
Burns Open, 2(3): 126-129, 2018

**Fetal bovine dermis as an alternative to allograft in large burn injuries**

The authors reviewed and compared their experience using fetal bovine dermis dermal substitute versus allograft for adult burn patients with large burn injuries. They performed a one-year retrospective review of adult burn patients with a TBSA of 50% or greater who underwent grafting with either fetal bovine dermis or allograft. Data collected included age, TBSA, length of stay, number of operations, % area grafted with either allograft or fetal bovine dermis, and time between allograft or fetal bovine dermis grafting to autografting. Fifteen patients met the review’s inclusion criteria. The authors conclude that fetal bovine dermis is an acceptable alternative to allograft in patients with a large TBSA burn-injury. Further studies are needed to determine if infectious and functional outcomes are improved with fetal bovine dermis.

Sen S et al. 
Burns Open, 2(4): 178-180, 2018

**Effect of tadalafil on reduction of necrosis in the ischemic zone in a rat comb burn model**

The authors compared various combinations of naproxen [NPX], N-acetyl cysteine [NAC], and tadalafil [TD] (a phosphodiesterase-5 inhibitor used as a vasodilator to treat erectile dysfunction) in a rat comb burn model to determine their effects on injury progression. They created two comb burns on the backs of 40 anesthetized Sprague-Dawley rats. They then randomized five animals each to daily oral gavage with TD (1 mg/kg), NPX (10 mg/kg), NAC (500 mg/kg), NAC + NPX, TD + NPX, TD + NAC, TD + NPX + NAC, or normal saline [NS]. Wounds were observed daily for gross evidence of necrosis in the unburned interspaces, and full-thickness biopsies from the interspaces were evaluated with Hematoxylin & Eosin seven days after injury for histological evidence of necrosis. Results demonstrated that daily oral therapy with tadalafil reduces necrosis in the unburned interspaces compared with naproxen, NAC, or their combination in a rat comb burn model. The addition of naproxen or NAC to tadalafil does not further reduce injury progression.

Singer AJ et al. 
Burns, 44(6): 1427-1432, 2018

**Burn and amputations: a retrospective analysis of 379 amputations out of 19,958 burns in 10-years**

In this article the authors review their ten-year experience of amputation following burn injury in order to provide a framework for prevention, treatment and rehabilitation. This was a retrospective study of burn patients admitted to the Hallym Burn Centre over the period 2001-2010. Data were collected from the medical records of 19,958 patients. A total of 379 underwent amputation. Amputation rate was highest for electrical burn. The most common amputation was finger amputation, followed by toe amputation and transhumeral amputation. The information gathered during this investigation is expected to help promote a reduction in the incidence of burn amputations, and improve the rehabilitation outcomes of burn amputees.

Jang KU et al. 
Int J Phys Med Rehabil, 6(2): 462, 2018