

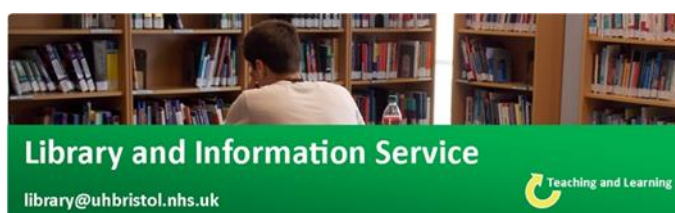
Burns

Evidence Update

August 2017 (Quarterly)



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Embracing change
Recognising success
Working together
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 Teaching and Learning

Contents

NICE National Institute for Health and Care Excellence	5
	5
	6
BBA: British Burn Association	7
Journals: Tables of Contents	8
Database Articles	10
Exercise: Relative Risk	42
Library Opening Times	44

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Training Calendar 2017

All sessions are one hour

August (12.00-13.00)

4th (Fri)	Critical Appraisal
9th (Wed)	Literature Searching
15th (Tues)	Interpreting Statistics
24th (Thurs)	Critical Appraisal

September (13.00-14.00)

Fri 1st	Literature Searching
Mon 4th	Critical Appraisal
Tue 12th	Interpreting Statistics
Wed 20th	Literature Searching
Thu 28th	Critical Appraisal

October (12.00-13.00)

Fri 6th	Interpreting Statistics
Mon 9th	Literature Searching
Tue 17th	Critical Appraisal
Wed 25th	Interpreting Statistics

Updates

NICE National Institute for
Health and Care Excellence

[Scar massage for hypertrophic burns scarring-A systematic review](#)

Source: [PubMed](#) - 29 June 2017 - Publisher: Burns : Journal Of The International Society For Burn Injuries [Read Summary](#)

[Skin infections, bacterial | Treatment summary](#)



Source: [British National Formulary for Children - BNFC](#) - 14 July 2017

[Skin infections | Treatment summary](#)



Source: [British National Formulary for Children - BNFC](#) - 14 July 2017

[Public Health England: Management of infection guidance for primary care for consultation and local adaptation: Update \[PDF\]](#)

Source: [Public Health England](#) - 10 May 2017 - Publisher: Public Health England [UKMi comment](#)

[Association of human leukocyte antigen variants and allopurinol-induced Stevens-Johnson syndrome and toxic epidermal necrolysis: A meta-analysis](#)

Source: [PubMed](#) - 01 May 2017 - Publisher: American Journal Of Health-system Pharmacy : Ajhp : Official Journal Of The American Society Of Health-system Pharmacists [Read Summary](#)



[Antiseptics for burns](#)

Gill Norman, Janice Christie, Zhenmi Liu, Maggie J Westby, Jayne M Jefferies, Thomas Hudson, Jacky Edwards, Devi Prasad Mohapatra, Ibrahim A Hassan, Jo C Dumville

Online Publication Date: July 2017

[Antibiotics for treating infected burn wounds](#)

Jing Lu , Ming Yang , Mei Zhan , Xuwen Xu , Jirong Yue and Ting Xu

Online Publication Date: July 2017

[Pre-admission antibiotics for suspected cases of meningococcal disease](#)

Thambu D Sudarsanam , Priscilla Rupali , Prathap Tharyan , Ooriapadickal Cherian Abraham and Kurien Thomas

Online Publication Date: June 2017

Treatment of minor thermal burns

- [Oral burns](#)
- [Minor burns](#)
- [Summary and recommendations](#)
- [Superficial partial thick burn \(Pictures\)](#)
- [Deep partial thickness burn \(Pictures\)](#)

Overview of the management of the severely burned patient

- [Severe burn injury](#)
- [Summary and recommendations](#)

Local treatment of burns: Topical antimicrobial agents and dressings

- [Local treatment of burn scars](#)
- [Burn blisters](#)
- [Summary and recommendations](#)

Emergency care of moderate and severe thermal burns in children

- [Evaluation of burn injury](#)
- [Summary and recommendations](#)

Burn pain: Principles of pharmacologic and nonpharmacologic management

- [Children](#)
- [Adults](#)
- [Summary and recommendations](#)

Overview of nutritional support for moderate-to-severe burn patients

- [Children](#)
- [Summary and recommendations](#)

Management principles for burns resulting from mass disasters and war casualties

- [Management principles of the burn disaster plan](#)
- [Application to civilian, non-mass casualty, burns](#)
- [Summary and recommendations](#)

Principles of burn reconstruction: Overview of surgical procedures

- [Burn reconstruction procedures](#)
- [Summary and recommendations](#)

Overview and management strategies for the combined burn trauma patient

- [Immediate burn wound management](#)
- [Summary and recommendations](#)

Principles of burn reconstruction: Face, scalp, and neck

- [Burns to the face](#)
- [Burns to the scalp](#)
- [Summary and recommendations](#)

BBA: British Burn Association

<http://www.britishburnassociation.org/>

BBA Special Interest Groups

Under the umbrella organisation of the BBA, there are a number of Special Interest Groups (SIG's). Each of these usually meet at the Annual Meeting of the British Burn Association, but in addition may organise on occasion additional meetings, usually educational in nature at different times and venues. SIG meetings are free of charge to Association Members. Non-Members attending a SIG more than once are charged a nominal fee. The Research SIG is an exception as due to confidentiality, participants are required to be BBA Members. Meeting notes, questionnaires and general correspondence are only sent to BBA Members.

The list of SIG's currently include:

Burn Dietetics Group

Concerned with the nutritional requirements of individuals with burn injury.

Burn Therapists' Special Interest Group

Concerned with the occupational therapy and physiotherapy of individuals who have suffered burn injury. [BTIG Website Main Page 2016.pdf](#)

Psychosocial Group

Concerned with the psychological recovery and social re-integration of individuals who have suffered burn injury. For more information, please see the [Psychosocial SIG pages](#).

Nurses Special Interest Group

Concerned with aspects of nursing care for individuals who have suffered a burn injury.

Microbiology & Infection Prevention Special Interest Group

Concerned with microbiology and infection prevention within burn services.

Burn Club Special Interest Group

Concerned with the organisation and running of burn clubs and camps.

Journal Tables of Contents

Click on the hyperlinked journal title (+Ctrl) for the most recent tables of contents. If you would like any of the papers in full text then please email the library: library@uhbristol.nhs.uk

Burns

August 2017, Volume 43, Issue 5

Journal of Burn Care & Research

July/ August 2017, Volume 38, Issue 4

Injury Prevention

August 2017, Volume 23, Issue 4

Plastic and Reconstructive Surgery

July 2017, Volume 140, Issue 1

Journal of Plastic, Reconstructive & Aesthetic Surgery

August 2017, Volume 70, Issue 8

Archives of Disease in Childhood

August 2017, Volume 102, Issue 8

Pediatrics

July 2017, Volume 140, Issue 1

Injury

July 2017, Volume 48, Issue 7

Trauma

July 2017, Volume 19, Issue 3



KnowledgeShare

What is KnowledgeShare?

Provides regular, targeted, personalised evidence updates to staff, based on their specific professional interests. Subject-specific bulletins can also be produced.

Targeted evidence updates

These are individualised, based on a staff member's interest in particular conditions or lifestyle factors, age groups, settings of care, interventions and management topics.

Collaboration and knowledge sharing

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Database Articles

Below are a selection of articles on burns recently added to the healthcare databases. If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch:

library@uhbristol.nhs.uk

Fancy a cup of scald? - The role of hot beverage burns in paediatric burns admissions in Ireland

Author(s): McGuire F.; Hegarty M.; Jennings P.; Marsden P.; Smith L.

Source: Irish Medical Journal; 2017; vol. 110 (no. 6); p. 583

Publication Type(s): Article

Abstract: Burns and scalds are preventable injuries in children that typically occur in the home. This study aimed to examine the role of hot beverage scalds in paediatric burn admissions in order to identify key target audiences for future safety strategies. Using the Hospital Inpatient Enquiry System (HIPE) a retrospective study of paediatric burn admissions in 2014 examined demographics, cause and severity of injury and location of occurrence. There were 233 paediatric discharges (age 0-18 yrs.) with a principal diagnosis of burn injury; 57% of these occurred in children under three years and 95% of these occurred in the home. Scalds caused 74% of burn injuries; hot beverages accounted for least 33% of these of which 77% were partial thickness and 73% were upper body burns. Effective hot beverage scald prevention strategies, targeted towards caregivers in the home, are required. Copyright © 2017, Irish Medical Association. All rights reserved.

Pediatric Burn Reconstruction. Focus on Evidence

Author(s): Fisher M.

Source: Clinics in Plastic Surgery; 2017

Publication Type(s): Article In Press

Abstract: In this article, the author surveys the best available evidence to guide decision-making in pediatric burn reconstruction. Evidence-based protocols are examined in the context of optimizing form and function in children who have sustained burn injury. Copyright © 2017 Elsevier Inc.

Pain and distress outcomes in infants and children: A systematic review

Author(s): Oliveira N.C.A.C.; Gasparido C.M.; Linhares M.B.M.

Source: Brazilian Journal of Medical and Biological Research; 2017; vol. 50 (no. 7)

Publication Type(s): Review

Available in full text at [Brazilian journal of medical and biological research = Revista brasileira de pesquisas medicas e biologicas / Sociedade Brasileira de Biofisica \[Braz J Med Biol Res\] NLMUID: 8112917](#) - from EBSCOhost

Abstract: The aim of the present study was to systematically review the recent literature about pain and distress outcomes in children and critically analyze the methodological quality of the reports. The systematic review was based on the PRISMA statement and performed by selecting articles that are indexed in scientific databases. The methodological quality of reports was examined using STROBE statement, for observational studies, and CONSORT statement, for randomized controlled trials. The PedIMMPACT consensus was used to evaluate the psychometric quality of pain

instruments. We analyzed 23 empirical studies, including 14 randomized controlled trials, seven cross-sectional studies, and two studies with cohort designs. Fourteen studies included preschool- and schoolchildren, and nine studies included infants. Regarding studies with infants, pain responses were evaluated by heart rate, crying and behavioral observation scales, and distress was evaluated only by salivary cortisol. Four-handed care and sensorial saturation interventions were used to evaluate efficacy to reduce pain and distress responses. Concerning studies with children, both pain and distress responses were evaluated by self- and hetero-reports, behavioral observation and/or physiological measures. Distraction was effective for reducing pain and distress during burn dressing changes and needle procedures, and healing touch intervention reduced distress and pain in chronic patients. All of the studies scored at least 60% in the methodological quality assessment. The pain outcomes included measures of validity that were classified as well-established by the PedIMMPACT. This systematic review gathers scientific evidence of distress-associated pain in children. Pain and distress were measured as distinct constructs, and their associations were poorly analyzed. Copyright © 2017, Associacao Brasileira de Divulgacao Cientifica. All rights reserved.

Retrospective analysis on thermal injuries in children-Demographic, etiological and clinical data of German and Austrian pediatric hospitals 2006-2015-Approaching the new German burn registry

Author(s): Tegtmeier L.C.; Klinke M.; Reinshagen K.; Koenigs I.; Herrnstadt G.R.; Maier S.L.

Source: Burns; 2017

Publication Type(s): Article In Press

Abstract:Objective: The purpose of this observational, multi-center study was to reveal epidemiologic, etiological and clinical aspects of hospitalized children with thermal injuries in Germany and Austria and the workup of a renewed web-based pediatric burn registry. Methods: From 2006 to 2015, comprehensive patient data of thermally injured children in Germany and Austria were collected prospectively. Retrospective analysis of age, gender, mechanism of injury, total body surface area burned, way of admission and length of stay was performed, followed by the comparative analysis between designated burn centers and other pediatric hospitals. Results: 32 hospitals participated in the study including data of 13,460 thermally injured hospitalized children. The majority was 12-Copyright © 2017 Elsevier Ltd and ISBI.

A five year review of paediatric burns and social deprivation: Is there a link?

Author(s): Richards H.; Kokocinska M.; Lewis D.

Source: Burns; 2017

Publication Type(s): Article In Press

Abstract:Aim: To establish if there is a correlation between burn incidence and social deprivation in order to formulate a more effective burns prevention strategy. Methods: A quantitative retrospective review of International Burn Injury Database (IBID) was carried out over a period from 2006 to 2011 to obtain data for children referred to our burns centre in West Midlands. Social deprivation scores for geographical areas were obtained from Office of National Statistics (ONS). Statistical analysis was carried out using Graphpad Prism. Results: 1688 children were reviewed at our burns centre. Statistical analysis using Pearson correlation coefficient showed a slight association between social deprivation and increasing burn incidence $r^2 = 0.1268$, 95% confidence interval 0.018-0.219, p value Copyright © 2017 Elsevier Ltd and ISBI.

School reintegration of pediatric burn survivors: An integrative literature review

Author(s): Pan R.; dos Santos B.D.; Nascimento L.C.; Rossi L.A.; Geenen R.; Van Loey N.E.

Source: Burns; 2017

Publication Type(s): Article In Press

Abstract:Background: The school is an essential context for children's social interaction with peers and to develop academic skills. Therefore, a fast reintegration can help children with burns to normalize their life. Thus, school reintegration is an important outcome after burns. The aim of this review was to systematically synthesize the literature addressing school reintegration programs of pediatric burns survivors. Methods: Five electronic databases were searched independently by two reviewers. The search yielded 13 eligible publications. A qualitative content analysis was conducted. Results: The two themes identified centered around (1) the roles, obstacles, and support for the different stakeholders (i.e., the child, parents and teacher) and (2) the contents of the school reintegration programs in which subthemes such as purpose, planning, essential elements, team, and effect were distinguished. The results show that return to school should start as soon as the child is admitted to the hospital and the program should acknowledge the different stakeholders' needs and tailor the program to these needs. Conclusion: The review emphasizes the necessity of an integrated school reintegration program empowering both the child, the parents and the teachers and tailored to the child's specific situation. Furthermore, it offers recommendations for further improvement of the field. Copyright © 2017 Elsevier Ltd and ISBI.

Perceived fatigue following pediatric burns

Author(s): Akkerman M.; Niemeijer A.S.; Nieuwenhuis M.K.; Mouton L.J.; Dijkstra F.

Source: Burns; 2017

Publication Type(s): Article In Press

Abstract:Purpose: Fatigue is a common consequence of numerous pediatric health conditions. In adult burn survivors, fatigue was found to be a major problem. The current cross-sectional study is aimed at determining the levels of perceived fatigue in pediatric burn survivors. Methods: Perceived fatigue was assessed in 23 children and adolescents (15 boys and 8 girls, aged 6-18 years, with burns covering 10-46% of the total body surface area, 1-5 years post burn) using both child self- and parent proxy reports of the Pediatric Quality of Life Inventory Multidimensional Fatigue Scale. Outcomes were compared with reference values of non-burned peers. Results: At group level, pediatric burn survivors did not report significantly more symptoms of fatigue than their non-burned peers. Individual assessments showed, however, that four children experienced substantial symptoms of fatigue according to the child self-reports, compared to ten children according to the parent proxy reports. Furthermore, parents reported significantly more symptoms of fatigue than the children themselves. Age, gender, extent of burn, length of hospital stay, and number of surgeries could not predict the level of perceived fatigue post-burn. Conclusions: Our results suggest that fatigue is prevalent in at least part of the pediatric burn population after 1-5 years. However, the fact that parents reported significantly more symptoms of fatigue than the children themselves, hampers evident conclusions. It is essential for clinicians and therapists to consider both perspectives when evaluating pediatric fatigue after burn and to determine who needs special attention, the pediatric burn patient or its parent. Copyright © 2017 Elsevier Ltd and ISBI.

Hot tea and tiny tots don't mix: A cross-sectional survey on hot beverage scalds

Author(s): Burgess J.D.; Kimble R.M.; Watt K.A.; Cameron C.M.

Source: Burns; 2017

Publication Type(s): Article In Press

Abstract:Objective: Hot beverage scalds are a leading cause of burns in young children. The aim of this study was to look at the circumstances surrounding these injuries in terms of setting, mechanism, supervision and first aid to inform a prevention campaign. Methods: A cross-sectional study was delivered via iPad to parents and caregivers presenting with a child aged 0-36 months

with a hot beverage scald at a major paediatric burns centre. Results: Of the 101 children aged 0-36 months that presented with a hot beverage scald over a 12-month period, 54 participants were included. The scald aetiology was as expected with the peak prevalence in children aged 6-24 months, pulling a cup of hot liquid down over themselves. The majority of injuries occurred in the child's home and were witnessed by the caregiver or parent. The supervising adult was often in close proximity when the scald occurred. Less than a third (28%) of participants received recommended first aid treatment at the scene, with an additional 18% receiving this treatment with three hours of the injury-usually at an emergency department. Conclusions: While the aetiology of these scalds were as expected, the low use of recommended burn first aid was of concern. Although supervision was present in almost all cases, with the parent/caregiver close-by, this proximity still permitted injury. Attentiveness and continuity of supervision, which can be difficult with competing parental demands, appear to play a more important role; as do considerations of other safety mechanisms such as hazard reduction through keeping hot drinks out of reach and engineering factors such as improved cup design. By incorporating the findings from this study and other research into a hot beverage scald prevention campaign, we hope to see a change in knowledge and behaviour in parents and caregivers of young children, and ultimately a reduction in the incidence of hot beverage scalds. Copyright © 2017.

using less fluid has no negative impact on hydration status in children with moderate sized scalds: A prospective single-centre UK study

Author(s): Hollen L.; Coy K.; Young A.; Day A.

Source: Burns; 2017

Publication Type(s): Article In Press

Abstract:Background: After a burn, optimal fluid resuscitation is critical for positive patient outcome. Although national guidelines advocate using resuscitation fluids of 4. mL per kg body weight and percent body surface area (%BSA) for paediatric burns of >10% BSA, evidence in adults suggest that such volumes lead to over-resuscitation and related complications. Our aim was to investigate whether children managed with biosynthetic dressings (Biobrane™) and reduced fluid volumes remain well hydrated, as determined by clinical and laboratory parameters. Methods: At a single UK Burn Centre, children with scalds of 10-19%BSA managed with Biobrane were given 80% maintenance fluids and no formal burn resuscitation (permissive hypovolaemia [PH] group). Urine output (UO), serum sodium, urea, and creatinine were used as 24. h markers of hydration and concentrations compared to those in a patient cohort treated within the same centre when traditional resuscitation was used (TR group). Results: Serum sodium concentrations and UO in the PH group were similar to those in the TR group (median sodium: PH = 136, TR = 136, P = 1.00; median UO: PH = 1.5, TR = 1.8, P = 0.25). Urea concentrations were lower and creatinine concentrations higher in the TR group compared to the PH group (median urea: PH = 3.2, TR = 2.3, P = 0.04; median creatinine: PH = 21, TR = 30, P. Copyright © 2017 Elsevier Ltd and ISBI.

Verrucae Planae Within Previous Xenograft Sites of Burn Wounds

Author(s): Chen O.; Pearlstein M.V.; Morrell D.S.; Corley S.B.

Source: Pediatric Dermatology; 2017; vol. 34 (no. 3)

Publication Type(s): Article

Abstract:Burn injuries are known to compromise host immune defenses through disruption of mucocutaneous barriers and suppression of cell-mediated immune responses, which may render patients with burn injuries susceptible to viral infections in the days to years after an initial insult. We report a case of verrucae plana developing as a secondary condition confined to former xenograft sites in a child, appearing more than 3.5 years after initial second-degree burn injuries.

Only a few reports have previously described the development of verrucae in former burn sites, with most reporting latency to onset of verrucae appearance of months rather than years. Current hypotheses suggest that the postburn immune response shifts from an early proinflammatory to a late antiinflammatory response characterized by altered cytokine profiles and diminished cellular cytotoxicity mediated by cytotoxic T-lymphocytes, natural killer cells, and epidermal antigen-presenting cells, which together likely contribute to an enduring postburn regional immunosuppression that allows for the seeding and proliferation of viral agents. Copyright © 2017 Wiley Periodicals, Inc.

Toxic Epidermal Necrolysis-like Reaction after Hematopoietic Stem Cell Transplantation in Children

Author(s): Faraci M.; Giardino S.; Lanino E.; Morreale G.; Ghibauda E.; Francesia Berta M.; Risso M.

Source: Journal of Pediatric Hematology/Oncology; 2017; vol. 39 (no. 4); p. 254-258

Publication Type(s): Article

Abstract: This study reports clinical course, etiology, management, and long-term outcome of children who developed toxic epidermal necrolysis-like reaction (TEN-LR) after allogeneic hematopoietic stem cell transplantation (allo-HSCT). We retrospectively collected children with TEN-LR occurring after allo-HSCT performed in 2 pediatric bone marrow units between 2005 and 2014. We identified 6 cases of TEN-LR of 322 patients (1.8%). Possible triggers of TEN included antibiotics, antiepileptics, antimycotics, and Mycoplasma infection. In 3 patients TEN-LR occurred concurrently with severe multiorgan acute graft versus host disease. The management of TEN included administration of high doses of intravenous immunoglobulins and steroids (n=6), anti-tumor necrosis factor (n=3), and plasmapheresis (n=3) and whenever possible, discontinuation of the potentially causative drugs. Four patients (66%) reached a complete clinical response of TEN-LR after a median of 11.2 days. Two children (34%) are presently alive, 1 with long-term ocular sequelae. TEN-LR is a potentially lethal complication that may occur after HSCT also in pediatric patients. In our experience, TEN-LR and acute graft versus host disease probably coexisted and an overlap between the 2 forms is suggested. The multidisciplinary approaches involving specialized nurses, hematologists, dermatologists, burn surgeons, and infectious disease specialists is crucial to treat these patients. Copyright © 2017 Wolters Kluwer Health, Inc. All rights reserved.

Severe Cutaneous Adverse Drug Reactions in Pediatric Patients: A Multicenter Study.

Author(s): Dibek Misirlioglu, Emine; Guvenir, Hakan; Bahceci, Semiha; Haktanir Abul, Mehtap

Source: The journal of allergy and clinical immunology. In practice; 2017; vol. 5 (no. 3); p. 757-763

Publication Type(s): Journal Article

PubMedID: 28351788

Available in full text at [Journal of Allergy and Clinical Immunology. In Practice](#) - from ProQuest

Abstract: BACKGROUND The severe cutaneous adverse drug reactions (SCARs) are rare but could be life-threatening. These include drug reaction with eosinophilia and systemic symptoms (DRESS), Stevens-Johnson syndrome, toxic epidermal necrolysis (TEN), and acute generalized exanthematous pustulosis. OBJECTIVE The purpose of this study was the evaluation of the clinical characteristics of patients with the diagnosis of SCARs. METHODS Patients who were diagnosed with SCARs between January 2011 and May 2016 by pediatric allergy clinics in the provinces of Ankara, Trabzon, Izmir, Adana, and Bolu were included in this multicenter study. Clinical and laboratory findings, the time between suspected drug intake and development of clinical findings, treatments they have received, and length of recovery time were recorded. RESULTS Fifty-eight patients with SCARs were included in this study. The median age of the patients was 8.2 years (interquartile range, 5.25-13 years) and 50% (n = 29) were males. Diagnosis was Stevens-Johnson syndrome/TEN in 60.4% (n = 35), DRESS in

27.6% (n = 16), and acute generalized exanthematous pustulosis in 12% (n = 7) of the patients. In 93.1% of the patients, drugs were the cause of the reactions. Antibiotics ranked first among the drugs (51.7%) and antiepileptic drugs were the second (31%) most common. A patient who was diagnosed with TEN developed lagophthalmos and a patient who was diagnosed with DRESS developed secondary diabetes mellitus. Only 1 patient with the diagnosis of TEN died. CONCLUSION SCARs in children are not common but potentially serious. Early diagnosis and appropriate treatment of SCARs will reduce the incidence of morbidity and mortality.

Use of Essential Oils Following Traumatic Burn Injury: A Case Study.

Author(s): Jopke, Kathleen; Sanders, Heather; White-Traut, Rosemary

Source: Journal of pediatric nursing; 2017; vol. 34 ; p. 72-77

Publication Type(s): Journal Article

PubMedID: 28089405

Abstract: Hospital admissions related to burn injury reach 40,000 annually. Patients who experience extensive burns require longer hospital stays and are at increased risk for infection and hospital acquired conditions. This comparative case study is a two patient matched case control design that follows the hospital course of two children who experienced burn injuries. For one of these patients, with the consent of the child's parents, the grandmother treated her granddaughter with essential oils. Essential oils have the potential to inhibit microbial growth, support treatment of wounds, and facilitate healing. However, there have been no large scale studies on essential oils. Data for the two cases were retrieved from the electronic medical record at a Midwestern Pediatric Hospital. Retrieved data included burn site description, treatment for burns, number of days on the ventilator, white blood cell count, length of hospital stay, number of ICU days, infections diagnosed by positive culture and pain ratings. While the goals for treatment were the same for both children, the child who received only standard care was diagnosed with two blood stream infections and four hospital acquired conditions while the child who received supplemental treatment with essential oils did not develop any blood stream infections, was diagnosed with one hospital acquired condition, was in the PICU one day less, and had a four day shorter length of hospital stay. While these case findings are intriguing, research is needed to expand understanding of the role of essential oils in the treatment of burns.

Keeping pace with the media; Giant Hogweed burns - A case series and comprehensive review.

Author(s): Baker, Benjamin G.; Bedford, James; Kanitkar, Suryakant

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 933-938

Publication Type(s): Academic Journal

Abstract: Phytophotodermatitis is almost exclusively reported in the dermatological literature, but may progress to a chemical burn. There has been widespread media reporting during the summer of 2015 of burns caused by giant hogweed. However, there is a lack of awareness of this mechanism of injury amongst the burn multidisciplinary team, and there have been no published articles in the surgical literature regarding plant burns, other than sporadic case reports, for 20 years. We present a comprehensive review of plant burns and three cases from our adult and paediatric Burn Centres of burns caused by giant hogweed. Accurate diagnosis is straightforward with a detailed history and is important to prompt appropriate treatment, and prevent a misdiagnosis of non-accidental injury. This review and case series are timely to raise awareness of phytophotodermatitis and burns caused by plants to burns multidisciplinary teams. Prospective studies are warranted to assess the efficacy of topical treatments and surgical management.

Herpesviridae infections in severely burned children.

Author(s): Wurzer, Paul; Cole, Megan R.; Clayton, Robert P.; Hundeshagen, Gabriel;

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 987-992

Publication Type(s): Academic Journal

Abstract:Objective: Burn-related immunosuppression can promote human herpesviridae infections. However, the effect of these infections on morbidity and mortality after pediatric burn injuries is unclear. Methods: We retrospectively analyzed pediatric patients with burns $\geq 10\%$ of the total body surface area (TBSA) who were admitted between 2010 and 2015. On clinical suspicion of a viral infection, antiviral therapy was initiated. Viral infection was confirmed via Tzanck smear, viral culture, and/or PCR. Study endpoints were mortality, days of antiviral agent administration, type of viral test used, type of viral infection, and length of hospitalization. Results: Of the 613 patients were analyzed, 28 presented with clinically diagnosed viral infections. The use of Tzanck smears decreased over the past 5 years, whereas PCR and viral cultures have become standard. Patients with viral infections had significantly larger burns ($53 \pm 15\%$ vs. $38 \pm 18\%$, $p < 0.001$); however, length of stay per TBSA burn was comparable (0.5 ± 0.4 vs. 0.6 ± 0.2 , $p = 0.211$). The most commonly detected herpesviridae was herpes simplex virus 1. Two patients died due to sepsis, which was accompanied by HSV infection. The mortality rate among all patients (2.7%) was comparable to that in the infected group (7.1%, $p = 0.898$). Acyclovir was given systemically for 9 ± 8 days ($N = 76$) and/or topically for 9 ± 9 days for HSV ($N = 39$, combination of both $N = 33$). Ganciclovir was prescribed in three cases for CMV. Conclusions: Viral infections occur more commonly in patients suffering from larger burns, and HSV infections can contribute to mortality.

Ultrasound is a reproducible and valid tool for measuring scar height in children with burn scars: A cross-sectional study of the psychometric properties and utility of the ultrasound and 3D camera.

Author(s): Simons, M.; Kee, E. Gee; Kimble, R.; Tyack, Z.

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 993-1001

Publication Type(s): Academic Journal

Abstract:Objective: The aim of this study was to investigate the reproducibility and validity of measuring scar height in children using ultrasound and 3D camera. Method: Using a cross-sectional design, children with discrete burn scars were included. Reproducibility was tested using Intraclass Correlation Coefficient (ICC) for reliability, and percentage agreement within 1mm between test and re-test, standard error of measurement (SEM), smallest detectable change (SDC) and Bland Altman limits of agreement for agreement. Concurrent validity was tested using Spearman's rho for support of pre-specified hypotheses. Results: Forty-nine participants (55 scars) were included. For ultrasound, test-retest and inter-rater reproducibility of scar thickness was acceptable for scarred skin ($ICC = 0.95$, $SDC = 0.06$ cm and $ICC = 0.82$, $SDC = 0.14$ cm). The ultrasound picked up changes of < 1 mm. Inter-rater reproducibility of maximal scar height using the 3D camera was acceptable ($ICC = 0.73$, $SDC = 0.55$ cm). Construct validity of the ultrasound was supported with a strong correlation between the measure of scar thickness and observer ratings of thickness using the POSAS ($\rho = 0.61$). Construct validity of the 3D camera was also supported with a moderate correlation ($\rho = 0.37$) with the same measure using maximal scar height. Conclusions: The ultrasound is capable of detecting smaller changes or differences in scar thickness than the 3D camera, in children with burn scars. However agreement as part of reproducibility was lower than expected between raters for the ultrasound. Improving the accuracy of scar relocation may go some way to address agreement.

Assessing guidelines for burn referrals in a resource-constrained setting: Demographic and clinical factors associated with inter-facility transfer.

Author(s): Klingberg, A.; Wallis, L.; Rode, H.; Stenberg, T.; Laflamme, L.; Hasselberg, M.

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 1070-1077

Publication Type(s): Academic Journal

Abstract:Aim: The aim was to assess demographic and clinical factors associated with inter-facility referrals for patients with burns in a resource-constrained setting.Methods: This was a cross-sectional case review of patients presenting with a burn at the trauma unit at the Red Cross War Memorial Children's Hospital (RXH) in Cape Town, South Africa.Results: Six hundred and eleven (71%) children were referred to the burns or the intensive care unit and 253 children were treated and discharged from the trauma unit. Of those admitted as inpatients 94% fulfilled at least one of the criteria for referral and 80% of those treated and discharged fulfilled the criteria for referral.Conclusions: Almost three out of four children evaluated at the trauma unit were referred to the burns unit for further management. However, a large number of patients were treated and discharged from the trauma unit despite being eligible for referral.

Percutaneous collagen induction as an additive treatment for scar formation following thermal injuries: Preliminary experience in 47 children.

Author(s): Kubiak, Rainer; Lange, Bettina

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 1097-1102

Publication Type(s): Academic Journal

Abstract:Background: Thermal injuries are one of the most physically and psychologically devastating causes of pediatric trauma. Post-traumatic sequelae such as hypertrophic scars and contractures often result in long lasting morbidity and disfigurement. Conservative therapy, including pressure garments and silicone, is the gold standard for scar management in the pediatric population. Most recently percutaneous collagen induction (PCI) was introduced as an alternative treatment in adults. The aim of this report was to share our experience with PCI in children and adolescents in scar management following thermal injuries.Patients and Methods: Between July 2013 and February 2016, a total of 99 PCI treatments were performed on forty-seven children and adolescents for scar formation following thermal injuries in this retrospective study. A medical roller device (Dermaroller®, Dermaroller GmbH, Wolfenbüttel, Germany) with 2.5mm long needles was used. All procedures were carried out under general anesthesia. At the end of the operation vitamin A and vitamin C oil (ENVIRON® AVST Body Oil; Environ Skin Care, Pty. Ltd., Cape Town, South Africa) was applied topically. Photographs were taken before and a minimum of 4 weeks after the first PCI in order to document the effect on scar tissue. These images were graded according to the Vancouver Scar Scale (VSS).Results: The median age at the time of the first PCI was 8.3 years (range, 0.8-21.2 years). The median time interval between the injury and PCI was 18 months (range, 4-170 months). There were no intraoperative problems noted. Minor postoperative complications occurred in 2 patients (4.3%). All patients reported subjective improvement and were satisfied with the procedure and the results. Pre- and post-treatment photographs were available in 40 patients, and overall VSS scores improved post-treatment in all patients. Following a single PCI treatment, scar vascularity, pliability and height all improved, however there was no statistically significant effect on pigmentation.Conclusions: PCI is an enrichment of the armamentarium for scar treatment following thermal injuries in children and adolescents. Further prospective studies are recommended regarding the optimal timing for this treatment and long term outcome in the pediatric population.

Experience and outcomes of micrografting for major paediatric burns.

Author(s): Rode, H.; Martinez, R.; Potgieter, D.; Adams, S.; Rogers, A.D.

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 1103-1110

Publication Type(s): Academic Journal

Abstract:Background: The deficit of donor sites in major burns over 50% of the total body surface area has necessitated the application of methods besides traditional meshed autografting to achieve

definitive skin cover. The Meek micrografting technique was introduced at this hospital in 2011, especially in the absence of a reliable source of deceased donor allograft skin. The purpose of this study was to evaluate this strategy with reference to its technical execution, efficacy and indications in the context of major paediatric burn surgery. **Methods:** A cohort study was performed of all paediatric patients with major burn who underwent Meek micrografting at a dedicated paediatric burn centre in a developing country over a five year period. Demographics, details of their burns, operative management and clinical course and outcomes were collected from patient records and operative notes and analysed. **Results:** Thirty-five patients were managed using the micrografting technique during the study period. The mean patient age was 4.1 years (range 3 months-11 years) and their mean total body surface area (TBSA) burn was 49.7% (range 15-86%). Eleven patients sustained inhalation injuries and five developed a re-feeding syndrome on account of delayed referral. The mean abbreviated burn severity index (ABSI) was 8.5 (range 2-13). The hospital length of stay in the 27 survivors was a mean of 75.5 days, equating to 1.4 days per percentage burn. Eight patients died during the course of treatment, with a mean TBSA burn of 67.75% (range 38-86%). Graft take one month after surgery was documented to be more than 90% in 24 patients, of whom 3 subsequently died. Eleven patients had less than 90% graft take at this time, of whom 5 died. **Conclusion:** There is a considerable 'learning curve' associated with this technique. In order to achieve success one must ensure a completely viable, non-infected bed, obtained by tangential or fascial excision, followed by allografting as temporary coverage and to 'test the wound bed' for definitive coverage. Infection resulted in the majority of autograft loss in this series, and in addition to risk factors like burn size and inhalation injury, accounted for many of the deaths in this series. Meek micrografting offers high expansion ratios, thereby facilitating durable wound cover in the presence of limited donor sites. It is unlikely that a lethal dose, 50% (LD50) of almost 70% TBSA would have been possible in this context without the regular application of this technique. This study advocates for the widespread availability of Meek micrografting and deceased donor allograft skin in developing countries.

Changes in patterns of treatment of burned children at the Linköping Burn Centre, Sweden, 2009-2014.

Author(s): Elmasry, Moustafa; Steinvall, Ingrid; Abdelrahman, Islam; Olofsson, Pia; Sjöberg, Folke

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 1111-1119

Publication Type(s): Academic Journal

Abstract: Introduction: Children are a relatively large group among patients with burns in Sweden. We changed the management of children's burns to a flexible, outpatient-based plan. The aim was to follow up the outpatient management for children's burns during the period 2009-2014, and track it, to find out to what extent the patients had been treated flexibly as outpatients, and to clarify the reasons behind those who did not fit in the plan. **Methods:** Descriptive retrospective analysis dividing the patients into three groups: inpatients only, flexible management, and outpatients. Other variables recorded included: age, sex, percentage total body surface area burned (TBSA%), percentage full thickness burn (FTB%), cause of burn, county of residence, operations required, number of visits to the outpatient department, costs, and duration of overnight stay in the hospital. **Results:** The study group included 620 children: nine were managed strictly as inpatients, 204 as flexible outpatients, and 407 strictly as outpatients. Among the total there were 269 children who came from remote areas (43%), and of these 260 were treated as outpatients and flexible outpatients. Median TBSA% in the whole group was 1 (10th-90th centile 0-9) with the biggest median TBSA% 12 (5-38) in the inpatient group. The most common cause of injury was scalds (332/620, 54%). Costs/patient (US\$) was lower in the flexible outpatient group than in the inpatient group (median 10 557 (3213-35802) and 35343 (7344-66554), respectively). **Conclusion:** Based on the results, we expect that the flexible outpatient treatment plan for children with minor to moderate burns can be expanded in the future. The results encourage us to continue the service and to further

reduce duration of stay in hospital below the level already achieved (25% of the whole period of care).

RE: "Ultrasound is a reproducible and valid tool for measuring scar height in children with burn scars: A cross-sectional study of the psychometric properties and utility of the ultrasound and 3D camera" by M. Simons, E. Gee Kee, R. Kimble, Z. Tyack [Burns 43 (2017) 993-1001].

Author(s): Sinha, Sarthak; Agabalyan, Natacha A.; Gabriel, Vincent A.

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 1137-1138

Publication Type(s): Academic Journal

Response to Letter to the Editor: "Ultrasound is a reproducible and valid tool for measuring scar height in children with burn scars: A cross-sectional study of the psychometric properties and utility of the ultrasound and 3D camera".

Author(s): Simons, M.; Gee Kee, E.; Kimble, R.; Tyack, Z.

Source: Burns (03054179); Aug 2017; vol. 43 (no. 5); p. 1138-1139

Publication Type(s): Academic Journal

Consistency of total body surface area assessment in severe burns: Implications for practice.

Author(s): Face, Stephen; Dalton, Sarah

Source: Emergency Medicine Australasia; Aug 2017; vol. 29 (no. 4); p. 429-432

Publication Type(s): Academic Journal

Abstract:Background Paediatric burn injury is common and often serious. Injuries occur across New South Wales (NSW), with specialised treatment provided in a centralised burns unit. Early management prior to transfer is essential but variation is seen. Objectives To determine if differences exist between referring hospital estimates of the total body surface area (TBSA) of burns, and estimates for the same burns by the Burns Unit. To consider if differences in estimations influence initial and ongoing management, and decisions regarding transfer/retrieval. Methods A retrospective record review of all patients referred to NSW Newborn and Paediatric Emergency Transport Service (NETS) with burn injury between January 2009 and January 2011. Both NETS and NSW Burns Unit records were analysed. Results A total of 123 patients were referred to NETS with burn injury. Approximately half (55/123 = 45%) were referred with a TBSA >10% and transferred to the NSW Burns Unit, where just over half (33/55 = 60%) were assessed as >10%. This means 40% of cases received an initial overestimation of TBSA by referring hospitals. NETS medical teams transferred 34 patients to the Burns Unit, eight (24%) of which on retrospective review did not meet the NSW Burn Transfer Guidelines criteria for a medical team transfer. Conclusions Our review demonstrated significant differences between the TBSA assessment of referring hospitals and the NSW Burns Unit. These inconsistencies may have resulted in children receiving treatment and transport not indicated based on accurate TBSA assessment. Potentially unnecessary transfers have implications for the displacement of children and families but also impact overall health costs and resource availability.

Toxic epidermal necrolysis in a child 6 months post-hematopoietic stem cell transplantation

Author(s): Oba U.; Yamada H.; Suenobu S.-I.; Ihara K.; Nakamura Y.; Ito A.; Hatano Y.; Itonaga N.

Source: Pediatric Transplantation; Aug 2017; vol. 21 (no. 5)

Publication Type(s): Article

Abstract:TEN is a rare and critical disease mostly caused by drugs. It is mediated by activated CD8+ T cells that cause keratinocyte apoptosis with the assistance of cytokines/chemokines. We herein report a pediatric case of TEN after allogeneic HSCT with precursor B-cell acute lymphoblastic leukemia (pre-B-ALL) in second complete remission. Although we did not evaluate the T-cell subpopulation in blood or skin lesion of the patient, an imbalanced immune reconstitution after HSCT might additively contribute to the development of TEN. Copyright © 2017 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd

A systematic review and meta-analysis of clinical outcomes associated with nanocrystalline silver use compared to alternative silver delivery systems in the management of superficial and deep partial thickness burns

Author(s): Nherera L.M.; Trueman P.; Roberts C.D.; Berg L.

Source: Burns; Aug 2017; vol. 43 (no. 5); p. 939-948

Publication Type(s): Article

Abstract:Objective The purpose of this systematic review and meta-analysis was to assess the clinical effectiveness of nanocrystalline silver compared to alternative silver delivery systems (silver sulphadiazine [SSD] and silver nitrate) in adults and children with superficial and deep partial thickness burns. Methods PubMed, EMBASE, Cochrane and other databases were searched to identify relevant randomised controlled trials and observational studies. Results Eight studies that assessed both nanocrystalline silver and SSD and one study that compared nanocrystalline silver vs. silver nitrate were identified. Nanocrystalline silver compared to SSD/silver nitrate was associated with a statistically significant reduction in infections (odds ratio [OR] 0.21, 95% CI 0.07-0.62, $p = 0.005$), length of stay in hospital (mean difference -4.74 (95% CI -5.79 to -3.69, $p = 0.00001$) and surgical procedures (OR 0.40, 95% CI 0.28-0.56, $p = 0.00001$). Three studies that reported on pain had lower pain scores with nanocrystalline silver use than with SSD/silver nitrate; a high level of heterogeneity precluded pooling estimates. Conclusion This comprehensive systematic review and meta-analysis of the available evidence suggest that the use of nanocrystalline silver dressings results in shorter length of stay in hospital, less pain, fewer surgical procedures and reduced infection rates compared to silver sulphadiazine/silver nitrate. Copyright © 2017 Elsevier Ltd and ISBI

Burden of Burns in Brazil from 2000 to 2014: A Nationwide Hospital-Based Study.

Author(s): Santos, João Vasco; Souza, Júlio; Amarante, José; Freitas, Alberto

Source: World journal of surgery; Aug 2017; vol. 41 (no. 8); p. 2006-2012

Publication Type(s): Journal Article

Abstract:BACKGROUND Burns are a major public health concern, affecting mostly low- and middle-income countries. However, there is a lack of epidemiological studies on burns in these countries, particularly in Latin American countries. Our aim was to analyze nationwide demographic, epidemiological and economic characteristics of hospitalized burn patients in Brazil. METHODS A retrospective study was conducted including inpatients admitted with a diagnosis of burns (ICD-10:T20-T31) from all hospitals in Brazil from 2000 to 2014. We calculated hospitalization and in-hospital mortality rates. Length of stay (LoS), charges and premature mortality were also assessed. RESULTS A total of 412,541 burn hospitalizations were found, with a hospitalization rate of 14.56 hospitalizations/100,000 inhabitants/year. This rate is decreasing since 2003, mostly due to the reduction among children and elderly. Children below 5 years old accounted for 24% of all admissions. In-hospital mortality rate was 8.1% and median LoS was 5 days. Mean hospitalization charge was 856 international dollars. Substantial regional discrepancies were found in several indicators. CONCLUSION In this first Latin American nationwide study of burn patients, a decreasing trend of hospitalization rate and a low charge contrasted with a high in-hospital mortality rate. This

latter indicator, associated with a low LoS, may raise concerns regarding the quality of healthcare. Important discrepancies were found between regions, which may indicate important differences in regard to healthcare access and risk of burns. Targeting effective prevention, improving healthcare quality and providing more widespread and accurate burn registry are recommended.

Two-year follow-up of outcomes related to scarring and distress in children with severe burns.

Author(s): Wurzer, Paul; Forbes, Abigail A.; Hundeshagen, Gabriel; Andersen, Clark R.

Source: Disability & Rehabilitation; Jul 2017; vol. 39 (no. 16); p. 1639-1643

Publication Type(s): Academic Journal

Abstract: Purpose: We assessed the perception of scarring and distress by pediatric burn survivors with burns covering more than one-third of total body surface area (TBSA) for up to 2 years post-burn. Methods: Children with severe burns were admitted to our hospital between 2004 and 2012, and consented to this IRB-approved-study. Subjects completed at least one Scars Problems and/or Distress questionnaire between discharge and 24 months post burn. Outcomes were modeled with generalized estimating equations or using mixed linear models. Significance was accepted at $p < 0.01$. Results: Responses of 167 children with a mean age of 7 ± 5 years and burns covering an average $54 \pm 14\%$ of TBSA were analyzed. Significant improvements over the 2-year period were seen in reduction of pain, itching, sleeping disturbance, tightness, range of motion, and strength ($p < 0.01$). There was a significantly increased persistent desire to hide the scarred body areas over time ($p < 0.01$). The perception of mouth scarring, inability to portray accurate facial expressions, and skin coloration did not improve over the follow-up period. Conclusions: According to self-assessment questionnaires, severely burned children exhibit significant improvements in their overall perception of scarring and distress. However, these patients remain self-conscious with respect to their body image even 2 years after burn injury.

Occupational therapists' role in facilitating pain management in children with burn injuries.

Author(s): Kipping, Belinda; Miller, Kate

Source: Australian Occupational Therapy Journal; Jul 2017; vol. 64 ; p. 35-38

Publication Type(s): Academic Journal

Abstract: The article offers information on role of occupational therapists to manage pain in children with burn injuries and discusses the challenges faced by them. Topics discussed include impact of cognitive and emotional development on attenuation and motivation; impact of pain and stress experience could led to mental health issues, chronic pain, and sleep disturbances in children; and use of virtual reality to distract children and adolescents from their painful and anxiety-provoking procedures.

Exercise Treadmills: A Cause of Significant Hand Burns in Young Children.

Author(s): Noffsinger, Dana L.; Johnson, Susan R.; Wheeler, Krista; Junxin Shi; Huiyun Xiang;

Source: Journal of Burn Care & Research; Jul 2017; vol. 38 (no. 4); p. 215-219

Publication Type(s): Academic Journal

Abstract: A pediatric nurse practitioner and an occupational therapist were impressed by the number and severity of treadmill-related hand burns encountered in their outpatient burn clinic. They observed that treadmill burns appeared to be deeper compared with other contact hand burns. Literature review revealed that research was inadequate in this area. A retrospective chart review was conducted, and a total of 384 patients were found to receive treatments at a regional level 1 pediatric burn center for treadmill and contact hand burns from 2010 to 2014. Age distribution,

severity, and negative outcomes were compared between treadmill hand burns and contact hand burns. Recommendations for primary caregivers to prevent treadmill hand burns were given. Treadmill burns were the second most common hand injury mechanism after stovetop burns. Both hot surface contact burns and treadmill burns were more frequently seen in patients 0 to 4 years of age. Treadmill hand burns were more severe than contact hand burns in depth of injury (24.5 vs 1.4% full thickness), need for operative intervention (6.4 vs 0.0%), mean number of burn appointments (4.9 vs 1.9), median time to skin closure (25.2 days vs 11.0 days), and median length of care (51.0 days vs 11.0 days). Treadmill hand burns were frequently seen, and they were more severe and required an increased level and duration of care in comparison with other contact hand burns.

Oxandrolone Coadministration Does Not Alter Plasma Propranolol Concentrations in Severely Burned Pediatric Patients.

Author(s): Guillory, Ashley N.; Herndon, David N.; Silva III, Michael B.; Andersen, Clark R.

Source: Journal of Burn Care & Research; Jul 2017; vol. 38 (no. 4); p. 243-250

Publication Type(s): Academic Journal

Abstract:The systemic impact of severe burn injury results in a variety of disorders that require therapeutic intervention. Propranolol, a nonselective β_1 , β_2 -adrenergic receptor antagonist, reduces resting heart rate and cardiac work caused by elevated circulating catecholamines. Oxandrolone, a testosterone mimetic, promotes protein synthesis and anabolism to counter muscle wasting. Coadministration of these drugs is expected to synergistically improve patient outcomes. Testosterone administration is known to alter β -adrenergic receptor-mediated signaling. Here, we determined whether the coadministration of oxandrolone alters plasma propranolol concentrations. Ninety-two pediatric patients with burns covering $\geq 30\%$ of the TBSA were enrolled in this institutional review board-approved study and randomized to receive propranolol ($n = 49$) or oxandrolone + propranolol ($n = 43$). Plasma propranolol concentrations were determined following two dosing strategies: Q6 (liquid formulation; $n = 86$) and Q24 (extended-release capsule; $n = 22$). Samples were drawn before drug administration and at regular intervals throughout the next two dosing periods. Heart rate and blood pressure were recorded throughout the study. Propranolol half-life was 3.3 hours for the Q6 drug dosing frequency ($P < .0001$) and 11.2 hours for the Q24 strategy ($P < .0001$). Percentage of predicted heart rate declined by 2.8% for each doubling of the propranolol concentration in the Q6 dosing schedule ($P < .0001$). Percentage of predicted heart rate declined by 2.5% for each doubling of propranolol concentration on the Q24 dosing schedule ($P < .0001$). Maximum and minimum propranolol plasma concentrations were similar with either dosing regimen. The addition of oxandrolone did not affect any of the measured parameters. Oxandrolone coadministration does not alter propranolol's plasma concentration, half-life, or effect on heart rate. This study is registered at clinicaltrials.gov: NCT00675714.

The Effect of Socioeconomic Status and Parental Demographics on Activation of Department of Child and Family Services in Pediatric Burn Injury.

Author(s): Campos, Jessica K.; Wong, Yee M.; Hasty, Brittany N.; McElligott, Kelly A.; Mosier

Source: Journal of Burn Care & Research; Jul 2017; vol. 38 (no. 4)

Publication Type(s): Academic Journal

Abstract:Burns resulting from child maltreatment are tragic causes of significant morbidity and mortality, most commonly affecting children under 3 years of age. More than one third of nonaccidental burns occur in single-parent homes or have parents with history of mental illness, substance abuse, incarceration, or Department of Children and Family Services (DCFS) involvement. The authors sought to profile pediatric burn injuries associated with DCFS investigations. They

performed a retrospective chart review of pediatric burn patients, admitted between January 1, 2011 and December 31, 2014. They analyzed patient and household demographics, family composition, employment, zip code, insurance, etiology, percent TBSA burned, surgical interventions, length of hospital stay, disposition, prior DCFS involvement, and DCFS investigation outcomes. There were 126 DCFS investigations involving patients with average age of 2.6 ± 3.2 years and $5 \pm 5.6\%$ TBSA burn. Scalds were the most prevalent etiology at 76%. Parents involved with DCFS were 5 years younger than those without DCFS. Factors associated with increased odds of DCFS investigation were non-Caucasian race, single-parent homes, unemployed primary caretaker, Medicaid utilization, and prior DCFS involvement. A majority of DCFS investigations were initiated at outside hospitals, and they found one third to be substantiated cases of abuse. Non-Caucasian children, under 3 years of age, from lower socioeconomic or single-parent homes, are associated with higher rates of DCFS investigations. The majority of DCFS investigations were unsubstantiated and there were no significant epidemiological differences between unsubstantiated and substantiated cases of abuse. Improved understanding of sociodemographic risk factors for children at higher risk for negligence or intentional abuse warrants focused public health programs on regional prevention and education.

Correlation Between PaO₂/FIO₂ and Peripheral Capillary Oxygenation/FIO₂ in Burned Children With Smoke Inhalation Injury

Author(s): Cambiaso-Daniel J.; Voigt C.D.; Rivas E.; Hundeshagen G.; Nunez-Lopez O.; Kamolz L.-P.

Source: Pediatric Critical Care Medicine; Jul 2017

Publication Type(s): Article In Press

Abstract:OBJECTIVES:: Determine whether the peripheral capillary oxygenation/FIO₂ ratio correlates with the PaO₂/FIO₂ ratio in burned children with smoke inhalation injury, with the goal of understanding if the peripheral capillary oxygenation/FIO₂ ratio can serve as a surrogate for the PaO₂/FIO₂ ratio for the diagnosis of acute respiratory distress syndrome. DESIGN:: Retrospective chart review. SETTING:: Shriners Hospitals for Children-Galveston. PATIENTS:: All burned children with smoke inhalation injury who were admitted from 1996 to 2014 and had simultaneously obtained peripheral capillary oxygenation, FIO₂ and PaO₂ measurements. INTERVENTIONS:: None. MEASUREMENTS AND MAIN RESULTS:: Two hundred seventy-three patients (63% male, 8 ± 5 yr, $53\% \pm 24\%$ total body surface area burns) were analyzed. Peripheral capillary oxygenation/FIO₂ ratios were divided into four subgroups based on peripheral capillary oxygenation values (Copyright ©2017The Society of Critical Care Medicine and the World Federation of Pediatric Intensive and Critical Care Societies

Comparison of the results of early excision and grafting between children and adults; a prospective comparative study

Author(s): Ayaz M.; Keshavarzi A.; Bahadoran H.; Arasteh P.; Moslemi S.

Source: Bulletin of Emergency and Trauma; Jul 2017; vol. 5 (no. 3); p. 179-183

Publication Type(s): Article

Abstract:Objectives: To compare the outcomes of early excision and grafting between pediatric and adult patients with deep burns of less than 40% total body surface area burns (TBSA). Methods: This is a prospective comparative study. Overall, 106 patients admitted to Ghotbodini Burn Center in Shiraz, Iran from September 2012 to September 2013, were included in the study. All patients had less than 40% TBSA burn and had excision and grafting under 14 days from their injury. Patients were divided into two age groups of younger than 14 (n=49) and older than 14 (14-65) years old (n=57). During a 6-month follow-up period, the two groups were compared regarding mean percentage of graft take, total scar score, duration of hospital stay and itching score. Results: During

follow-up, the two groups did not show a significant difference in graft take, total scar score and itching score ($p=0.461$, $p=0.363$ and $p=0.637$, respectively). Clinically, the pediatric group showed less hospital stay (12.25 ± 9.1 vs. 16 ± 12.9), however this was not statistically significant ($p=0.091$). Conclusion: Adults and elderly patients (14-65 years old) compared to pediatric patients (less than 14 years old) with less than 40% TBSA burns, can expect similar results regarding scar score, graft take, itch score and hospital stay, after excision and grafting performed less than two weeks from their initial injury. Copyright © 2017 Trauma Research Center.

Adherence to referral criteria at admission and patient management at a specialized burns centre: The case of the red cross war memorial children's hospital in Cape Town, South Africa

Author(s): Boissin C.; Hasselberg M.; Kronblad E.; Laflamme L.; Kim S.-M.; Rode H.; Wallis L.

Source: International Journal of Environmental Research and Public Health; Jul 2017; vol. 14 (no. 7)

Publication Type(s): Article

Available in full text at [International journal of environmental research and public health \[Int J Environ Res Public Health\]](#) [NLMUID: 101238455](#) - from EBSCOhost

Abstract: Referral guidelines for burn care are meant to assist in decision-making as regards patient transfer and admissions to specialized units. Little is known, however, concerning how closely they are followed and whether they are linked to patient care. This is the object of the current study, focused on the paediatric burns centre of the Red Cross War Memorial Children's Hospital in Cape Town, South Africa. All patients admitted to the centre during the winters of 2011-2015 ($n = 1165$) were included. The patient files were scrutinized to clarify whether the referral criteria in place were identified (seven in total) and to compile data on patient and injury characteristics. A case was defined as adherent to the criteria when at least one criterion was fulfilled and adherence was expressed as a percentage with 95% confidence intervals, for all years aggregated as well as by year and by patient or injury characteristics. The association between adherence to any individual criterion and hospital care (surgery or longer length of stay) was measured using logistic regressions. The overall adherence was 93.4% (100% among children under 2 years of age and 86% among the others) and it did not vary remarkably over time. The two criteria of "injury sustained at a specific anatomical site" (85.2%) and "young age" (51.9%) were those most often identified. Children aged 2 years or older were more likely to undergo surgery or to stay longer than those of young age (although a referral criterion) and so were those with higher injury severity (a referral criterion). In this specialized paediatric burns centre, children are admitted mainly according to the guidelines. However, given the high prevalence of paediatric burns in the region and the limited resources at the burns centre, adherence to the guidelines need to be further studied at all healthcare levels in the province. Copyright © 2017 by the authors. Licensee MDPI, Basel, Switzerland.

Cutaneous lesions in children acquired during hospital stay: A prospective cross sectional study

Author(s): Basu S.; Dhariwal N.; Chander R.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract: Background and aims: Hospital acquired skin lesions can arise from any aspect of health care management including any procedure or medication leading to the loss of skin integrity. Most of the published literature is on neonates admitted in intensive care setting and there is paucity of data regarding these lesions specially in children in general ward settings where this problem goes unattended. This study was conducted to determine the proportion of various types of skin lesions acquired during hospital stay in paediatric patients. Methods: This was a Hospital-based Cross-sectional Observational study done over a period of 9 months. Out of 3019 patients admitted in the unit and unit admissions shifted to PICU, 400 consecutive patients in the age-group of 0-18 years with hospital acquired skin lesions (Traumatic lesions, Cutaneous adverse drug reactions and

Healthcare associated skin infections) were enrolled and followed up till discharge. Severity of nasal lesions was staged by Nascimento's Staging. Results: The proportion of hospital acquired skin lesions in admitted patients was found to be 13.25%; 13.01% in paediatric general ward and 19.81% in PICU. Amongst general paediatric wards, majority were in the age group of 1 month- 1 year (50.4%, 191 out of 379) followed by 24.54% patients in age group of upto 1 month of age. Of these, 86.27% were traumatic lesions (327/379), 10.03% were CADRs (38/379) and 3.7% were infective lesions (14/379). Extra vassation (calcium and Potassium) and adhesive lesions were the two most common lesions. Scalp lesions, Thermal burns, Chemical burns, Nasal lesions and Heel prick lesions were all present in less than 5% subjects. Most common type of CADR seen in ward patients was Maculopapular (55.26%) followed by Urticarial (39.47%). Steven Johnson Syndrome was seen in 2 patients (5.26%). Conclusions: Hospital acquired skin lesions are prevalent in paediatric general wards and some are preventable, but some are unintended, undesired and perhaps, nonpreventable complications to the standard protocol of treatment. There is an urgent need to recognize these lesions, which are currently underreported and formulate some form of guidelines to treat and prevent these lesions to bring about objectivity.

A systematic review of the treatment of Stevens Johnson syndrome and toxic epidermal necrolysis in children: Time for change?

Author(s): Mansour D.; Pope E.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract: Background: Reliable and validated data in the management of paediatric Stevens-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN) are lacking. Objective: To conduct a systematic review on the treatment of SJS and TEN in the paediatric population and evaluate time for arrest of blistering progression, time for re-epithelialization, length of hospital stay, and mortality rate. Methods: Systematic review of English and non-English articles using EMBASE (1947-2016), MEDLINE (1946-2016), The Cochrane Central Register of Controlled Trials (2016), The Cochrane Database of Systematic Reviews (2005-2016), The Database of Abstracts of Reviews of Effects (2016), the NHS Economic Evaluation Database (2016), and the Health Technology Assessment Library (2016) using the following criteria: treatment using supportive care alone, IVIG, corticosteroids, surgical debridement, cyclosporine, and biologics. We excluded non-paediatric cases and those where specific treatment modalities and outcome measures of interest were missing. Results: The search yielded 1053 references, 50 of which were included in the study, with 225 cases. The main treatment modalities included: supportive care alone (62 cases), IVIG (76 cases), corticosteroids (57 cases), cyclosporine (3 cases), surgical debridement (23 cases), and biologics (infliximab, 4 cases). The average time for arrest of progression of blistering was 9.7 +/- 5.4 days for supportive care, 3.3 +/- 2.7 days for IVIG, 4.2 +/- 4.5 days for corticosteroids, 2.5 days (single case) for cyclosporine, and 1 +/- 0 days for infliximab. The average time for re-epithelialization was 28 days (single case) for supportive care, 12.5 +/- 8.8 days for IVIG, 8.1 +/- 5.4 days for corticosteroids, 14.7 +/- 4.7 days for surgical debridement, 9.0 +/- 4.2 days for cyclosporine, and 13.0 +/- 2.6 days for infliximab. Lastly, average length of hospital stay varied from 12.3 +/- 4.5 days for supportive care, 17.0 +/- 8.2 days for IVIG, 12.5 +/- 7.6 days for corticosteroids, 22.6 +/- 7.2 days for surgical debridement, 15.5 days (single case) for cyclosporine, and 19 days (single case) for infliximab. Further analysis regarding morbidity and mortality will follow. Conclusion: Paediatric patients receiving supportive care alone and surgical debridement had poorer outcomes than other treatment modalities. Further analysis will be conducted to differentiate the differences in response to IVIG and corticosteroids. New treatment modalities, cyclosporine and biologics, show promise.

Accentuation of a varicella exanthem at the site of previous immunization

Author(s): Theiler M.; Zehnder M.; Berger C.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract:Introduction: Chickenpox is a common viral exanthematous disease caused by Varicella zoster virus, a member of the Herpes virus family. The exanthem is characterized by the recurrent appearance of widespread vesicles that develop into crusted papules, leading to a polymorphous clinical presentation. We report a rare case of a child that developed aggregated varicella lesions first and predominantly at the site of a previous immunization. Case report: A 23-month-old girl was vaccinated in her left upper arm with the fourth dose of a hexavalent inactivated combination vaccine (Infanrix hexa; GlaxoSmithKline™) against diphtheria, tetanus, acellular pertussis (DTaP), hepatitis B (HBsAg), poliomyelitis (P1, P2, P3) and Haemophilus influenzae type b (Hib). The day after, she developed pronounced swelling of her left upper arm that completely regressed within 3-4 days. 1 week after the injection, she got swelling again followed by the appearance of aggregated papules and vesicles. Later on, few vesicles typical of a varicella exanthem developed on the rest of her body. Under treatment with acyclovir for 3 days the eruption stabilized. Varicella zoster virus was detected by PCR from a vesicle and her sister developed classic chickenpox 12 days later. Discussion/Conclusion: Accentuation of viral exanthems in areas of previous tissue injury is a well-recognized phenomenon described for different viruses such as Herpes simplex, Varicella zoster, Coxsackie A16 and A6 and Vaccinia among others (1, 2). Sun burns, insect bites, operative sites as well as other preexisting skin lesions may all serve as possible triggers. In recent years, the most frequent example has probably been widespread Coxsackie exanthems accentuated in areas of preexisting atopic eczema, known as "eczema coxsackium" (3). Why this phenomenon occurs is unclear. Prior tissue damage with hyperemia and increased plasma leakage might lead to a locally increased viral spread during the viremic phase of an infection and therefore predominant clinical manifestations (1). Furthermore, local inflammation and altered immunity might negatively impact local antiviral response (2). This is one of the only reports of accentuation of varicella lesions at the site of prior immunization. It is important to be aware of this phenomenon which is not an adverse effect of the immunization.

Bullous hench-schonlein purpura in children: An infrequent form of presentation

Author(s): Chaparro X.; Hasbun M.T.; Fischer C.; Kaplan V.; Rojas C.; Castro A.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract:Case report: A 14 years old girl with no history of other diseases or medications, presented with a two-week history of very painful blistering lesions on both lower extremities associated with arthralgia. No fatigue, abdominal pain or urinary symptoms were reported. The patient was admitted to the hospital and oral flucloxacillin was initiated without clinical improvement within 7 days. Her complete laboratory investigations were normal, and polymerase chain reaction for herpes simplex virus was negative. Multiple investigations were done: blood count, biochemistry test, liver function test, AELO, urinalysis, thyroid function tests, creatinine, complement, ANA, and were reported as normal. The histological examination showed leukocytoclastic vasculitis with a perivascular neutrophilic infiltrate, leucocytoclasia, and fibrinoid necrosis affecting the upper dermal venules, resulting in their destruction. In light of clinical and laboratory findings, the case was diagnosed as HSP. Discussion: The first reference in the literature of the bullous HSP was in 1985, by Garland. There is no evidence that bullous HSP is associated with worse prognosis. However, it is important to establish differential diagnosis with other blistering disorders in children such as erythema multiform, blistering impetigo, dermatitis herpetiformis or staphylococcal scalded skin syndrome, being necessary the skin biopsy to establish the definitive diagnosis. Although the use of corticosteroids in bullous HSP has not been widely reported, it has been shown that prednisone may

reduce the severity of skin manifestations and that topical corticosteroids are effective in treating mild to moderate bullous PSH in adults. Conclusion: The appearance of blistering lesions is an infrequent presentation of HSP. Although it is a worrying clinical condition it does not imply a worse prognosis and can usually be managed in the same conservative way as usual HSP. Therefore, clinical suspicion and histological confirmation is essential to a correct diagnosis.

Severe infantile pyoderma gangrenosum 'mimicking' a burn successfully managed with anakinra

Author(s): Mansh M.; Hylwa S.; Boull C.; Maguiness S.; Riskalla M.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract: A healthy 8-month old male was admitted to the burn unit for management of a rapidly progressive, painful anogenital ulcer. The ulcer had developed acutely over 48-72 hours and was associated with a few episodes of non-bloody, watery diarrhea. Dermatology was consulted for evaluation prior to scheduled debridement and skin grafting for a suspected chemical burn. The child appeared well and vital signs were within normal limits. Full body skin examination was significant for a symmetric, well-defined ulcer with a cribriform base, central necrosis, and rolled, pink-to-violaceous border, extending from the gluteal cleft to just inferior and medial to the scrotum. Initial laboratory work-up was significant for a leukocytosis (22,000/mm³) and thrombocytosis (764,000/mm³). Broad-spectrum intravenous antibiotics were initiated. Punch biopsy of the edge of the ulcer demonstrated mild epidermal hyperplasia and a mixed perivascular and interstitial infiltrate rich with neutrophils. Microbial stains were negative. Tissue culture for anaerobic/aerobic, mycobacterial, and fungal organisms were negative. Based on his clinical presentation, histopathologic and tissue culture findings, a diagnosis of pyoderma gangrenosum was made. Extensive work-up was unrevealing for evidence of associated disorders, including inflammatory bowel disease, rheumatologic, hematologic or immunodeficiency syndromes. PSTPIP1 gene mutation was negative. He was treated with oral prednisolone (2 mg/kg/day) and anakinra (50 mg/day), as well as clobetasol 0.05% ointment twice daily, with gradual improvement and near complete healing after six weeks. Pyoderma gangrenosum (PG) is a neutrophilic dermatosis characterized by rapidly progressive, painful ulcers. PG is rare in childhood, with infants and children comprising only 4% of PG cases. Less than 20 cases of PG have been reported among infants less than 1 year of age. In this age group, PG lesions more commonly occur in the perianal and genital areas and most cases are idiopathic. Given the rarity of this disorder in infants, diagnosis and appropriate treatment is often delayed. First line treatment includes systemic corticosteroids with adjuvant topical steroids or calcineurin inhibitors. Steroid-sparing agents include dapsone, colchicine, azathioprine, cyclosporine, TNF-alpha inhibitors, and anakinra, among others [1, 2]. Our patient continues to be followed for signs of an associated underlying condition, though none has been yet identified.

Cutaneous manifestations in children presenting to a paediatric emergency department-a study from India

Author(s): Udhayakumar P.; George R.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract: Background: There is a paucity of published studies on the prevalence, spectrum and clinical outcomes of dermatological conditions presenting to the paediatric emergency department (PED). Objective: To study 1) the clinical profile of skin manifestations in children presenting to the PED and 2) to assess the impact of skin lesions on the clinical outcome of admitted patients. Methods: A cross sectional study was conducted in a tertiary care hospital in India from August 2015 to July 2016 (1 year). All patients ≤ 16 years with primary dermatological complaints or skin lesions

secondary to systemic involvement were recruited into this study after examination by the primary investigator. Basic demographic data, salient dermatologic findings, systemic symptoms and relevant laboratory investigations were noted. Hospitalized patients were followed up till discharge. Relevant statistical tests were done. Results: 24324 consultations in PED were screened, of whom 203(0.83%) fulfilled the inclusion criteria. Mean age was 4.88 +/- 4.04 years, majority (43.84%) being in the age group of 1 to 5 years and M:F ratio was 1.60:1. The diagnostic categories noted were inflammatory disorders (n = 102, 50.24%) which included urticaria (n = 45, 22.16%), vasculitis (n = 9, 4.43%), erythemamultiforme (n = 5, 2.46%), DRESS syndrome (n = 4, 1.97%), seborrheic dermatitis (n = 4, 1.97%) and toxic epidermal necrolysis (n = 3, 1.47%) followed by infections (n = 91, 44.82%), disorders of epidermal differentiation and keratinization (n = 4, 2%) and connective tissue disorders (n = 2, 1%). Among these, urticaria was the most common condition seen in 22.16%(n = 45). 45/203 (22.16%) patients were hospitalized of whom 37.77% (n = 17) were due to infections, mainly staphylococcal scalded skin syndrome and suspected viral infections. The prevalence of viral infections was significantly higher during summermonths. 25/45 (55.55%) had associated SIRS. The mean age of hospitalized patients was significantly higher (6.11 years) than those children who were not hospitalized (4.44 years) (p = 0.013). The mortality among hospitalized patients was 0.9%. Conclusions: This study provides data on the clinical profile and outcome of dermatological problems encountered in a paediatric emergency department in a developing country.

Staphylococcal scalded skin syndrome in infant and children-3 case reports

Author(s): Katakam B.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract:Background: Staphylococcal scalded skin syndrome (SSSS) is caused by exotoxins released by *Staphylococcus aureus*, which damage desmosomes. The condition is commonest in infants and young children, where prognosis is considered good if appropriate therapy is given promptly. We report three cases of SSSS in infant and young children treated accordingly. Case one: 11 months old female infant presented with erythematous tender skin after 7 days of URTI. Nikolsky sign was positive and there were two fluid filled lesions. Mucosa, palmand soles were normal. There was no history of medication. Routine investigations were within normal limits. Throat culture was positive forMSSA. We made the clinical diagnosis of SSSS and the infant was treated with antibiotics along with supportive therapy and the lesions healed. Case two: Three years old male child brought to OPD with multiple blisters and erosions after 4 to 5 days of URTI, The child developed small vesicles on right ear and gradually spread. The child was afebrile. Musosa was normal. There was no history of medication. The skin was tender and Nikolski sign was positive. We made a clinical diagnosis of SSSS. Throat culture was positive for MSSA. The child was treated by antibiotics along with supportive care. There was response within 24 hours along with improved general condition. By the end of one week all lesions subsided and the child was discharged. Case three: 4 year female child presented with multiple spreading erosions, vesicles and few blisters following 10 days after URTI. On examination child was febrile with tender skin and positive nikolskys sign. Mucosa was normal. There was no involvement of palms and soles. No history of medication prior to lesions. We made the clinical diagnosis of SSSS and empiric antibiotics were started. Child was subjected to investigations. Throat swab was positive for MRSA sensitive to vancomycin. Child improved with IV vancomycin. Conclusion: While most cases of SSSS are easily diagnosed by high index of suspicion, it remains an emergency and a potential fatal condition in infants and young children. Treatment should be started early in emergency unit in order to have a good prognosis.

The preliminary results of a survey assessing pediatrician knowledge, approach, and comfort in managing stevens-johnson syndrome and toxic epidermal necrolysis in north America

Author(s): McDonald K.; Shelley A.; Bahubeshi A.; Worley B.; Ashton R.; Ramien M.

Source: Pediatric Dermatology; Jul 2017; vol. 34

Publication Type(s): Conference Abstract

Abstract:Background: There is a lack of clear treatment guidelines for the potentially fatal Stevens-Johnson Syndrome-Toxic Epidermal Necrolysis (SJS-TEN) hypersensitivity reaction spectrum in children. Although the mortality risk is lower in pediatric patients, there is a higher rate (50%) of long-term complications. The current SJSTEN diagnostic and management guidelines are unclear and the recent literature indicates North American pediatricians are uncomfortable managing these severe adverse drug reactions. In other medical specialties surveys of physicians have been used to establish the need for improved disease management, and to advocate for improved treatment guidelines. The primary purpose of our study is to establish a need for clear, clinically relevant SJS-TEN treatment guidelines by surveying pediatricians across North America. Specifically, we assessed their baseline knowledge, confidence, and approach in managing SJS-TEN. The results of our study will be used to guide the development of SJS-TEN management guidelines. Methods: Participants will be recruited through three professional organizations: the Canadian Pediatrics Society's Canadian Pediatric Surveillance Program, the American Pediatrics Society, and the American College of Emergency Physicians. To be included in the study, participants must be board-certified fellows or staff, practicing in Canada or the United States. Participants will receive a REDCap survey link via email. The self-administered survey includes informed implied consent, demographic information, knowledge of SJS-TEN, exposure and approach to EM-SJS-TEN, as well as comfort level managing these conditions. Results: Data collection will begin in April 2017. Although the final goal is to reach 300 survey responses, the preliminary data will include 50-100 participants. This data will indicate whether or not there is a need for improved disease definitions and clear management guidelines. Conclusion: The survey results will determine the need for improved disease definitions and management guidelines. They will direct for whom the guidelines are written, and what content requires the greatest attention.

Toxic epidermal necrolysis in a child with lupus-associated pancreatitis

Author(s): Marija S.; Dusica S.; Ivana B.; Nina R.; Dragan N.; Zlatko B.; Branislav J.; Jelena P.

Source: Rheumatology International; Jul 2017; vol. 37 (no. 7); p. 1221-1226

Publication Type(s): Review

Abstract:Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are life-threatening dermatological conditions that are characterized by mucosal erosions, epidermal detachments and erosions. The most common causes of SJS and TEN are drugs; other causes such as systemic lupus erythematosus (SLE), vaccinations and infections have been rarely implicated. We present the case of a 14-year-old female patient with acute pancreatitis as an initial manifestation of systemic lupus erythematosus, complicated by the toxic epidermal necrolysis with a fatal outcome. She initially presented with abdominal pain, fever, vomiting, and intolerance to oral intake and elevated pancreatic enzyme levels. Systemic lupus erythematosus was diagnosed secondary when her condition has been already complicated by the toxic epidermal necrolysis. The administration of corticosteroids and high doses of intravenous immunoglobulin did not lead to positive effects in the treatment of our patient. Copyright © 2017, Springer-Verlag Berlin Heidelberg.

Even Better Than the Real Thing? Xenografting in Pediatric Patients with Scald Injury

Author(s): Diegidio P.; Ortiz-Pujols S.; Jones S.W.; Cairns B.A.; Hultman C.S.; Hermiz S.J.; van Duin D

Source: Clinics in Plastic Surgery; Jul 2017; vol. 44 (no. 3); p. 651-656

Publication Type(s): Review

Abstract:This article reviews a single burn center experience with porcine xenografts to treat pediatric scald injuries, over a 10-year period. The authors compare xenografting to autografting, as well as wound care only, and provide outcome data on length of stay, incidence of health care-associated infections, and need for reconstructive surgery. Copyright © 2017 Elsevier Inc.

Negligent and Inflicted Burns in Children

Author(s): Collier Z.J.; Roughton M.C.; Gottlieb L.J.

Source: Clinics in Plastic Surgery; Jul 2017; vol. 44 (no. 3); p. 467-477

Publication Type(s): Review

Abstract:One in 4 American children have been abused and up to 5 children die per day from abuse. Children are vulnerable and error or lag in diagnosis may lead to further injury or death. In contrast, misdiagnosis of abuse is also unacceptable. Burns are a leading cause of abuse-related fatality and determination of cause can be difficult. It is critical that clinicians distinguish between burns of abuse (inflicted) and neglect and those received accidentally (noninflicted). Discordant narratives, use of alcohol and illicit substances, characteristics of the burn wound, and concomitant injury are all red flags for inflicted and negligent burns. Copyright © 2017 Elsevier Inc.

Pediatric Burn Care: Unique Considerations in Management

Author(s): Shah A.R.; Liao L.F.

Source: Clinics in Plastic Surgery; Jul 2017; vol. 44 (no. 3); p. 603-610

Publication Type(s): Review

Abstract:Severe pediatric burns require a multidisciplinary team approach at a specialized pediatric burn center. Special attention must be paid to estimations of total body surface area, fluid resuscitation and metabolic demands, and adequate analgesia and sedation. Long-term effects involve scar management and psychosocial support to the child and their family. Compassionate comprehensive burn care is accomplished by a multidisciplinary team offering healing in the acute setting and preparing the child and family for long-term treatment and care. Copyright © 2017 Elsevier Inc.

Why was a local anaesthetic used before administering intranasal ketamine for paediatric injuries?

Author(s): Lemoine, Sabine; Jost, Daniel; Bertho, Kilian; Tourtier, Jean Pierre

Source: Acta paediatrica (Oslo, Norway : 1992); Jul 2017

Publication Date: Jul 2017

Abstract:We were very interested to read Scheier et al's brief report on the use of intranasal ketamine in their pediatric emergency department, specifically for pain and anxiety in children who had resisted venipuncture or intravenous placement (1). Intravenous access can be difficult for pre-hospital medical teams that are not specialised in paediatric care, namely when children complain of pain from, for example suspected fractures and burns. This article is protected by copyright. All rights reserved.

Child understandings of the causation of childhood burn injuries: Child activity, parental domestic demands, and impoverished settings.

Author(s): Titi, N; van Niekerk, A; Ahmed, R

Source: Child: care, health and development; Jul 2017

Publication Type(s): Journal Article

Abstract:BACKGROUND Burns are a global public health problem. In South Africa, the rate of paediatric burn deaths is 5 times higher than other upper middle-income countries, with concentrations in impoverished settings. Globally, the majority of research focuses on expert and caregiver descriptions of burn occurrence, causation, and prevention, with limited consideration of children's perspectives. This study investigated children's understanding of the causation and prevention of childhood burns. METHODS Data were collected from eighteen 10- to 11-year-old children living in selected impoverished, fire-affected neighbourhoods in Cape Town, through 3 isiXhosa focus groups. All focus groups were transcribed, coded, and analysed for emerging themes through thematic analysis. RESULTS Themes regarding burn causation and risks centred around 4 themes: (a) developmental limits in context; (b) domestic chores, child capacity, and inability to say "no"; (c) inadequate supervision and compromised caregiving; and (d) unsafe structures. Child accounts of prevention pertained to (e) burn injury prevention activities in compromised environments and emphasized child agency, and upgrading the physical environment. CONCLUSION The children in this study ascribed burn injuries as the consequence of their developmental limits in the context of poverty, constraints on parental supervision, and unsafe environments. The children recommended safety education and upgrading their physical environments as part of burns injury prevention. The child accounts offer useful insights to inform safety interventions in impoverished settings.

Successful treatment of toxic epidermal necrolysis using plasmapheresis: A prospective observational study.

Author(s): Han, Feng; Zhang, Jingjing; Guo, Qi; Feng, Yanjing; Gao, Ya; Guo, Litao; Hou, Yanli; An, Jingang; Wang, Xiaopeng; Yan, Bin; Zheng, Yan; Song, Jingchun; Li, Manxiang; Wang, Gang

Source: Journal of critical care; Jul 2017; vol. 42 ; p. 65-68

Publication Type(s): Journal Article

Abstract:Toxic epidermal necrolysis (TEN) is a rare, severe, life-threatening skin disease and it requires urgent critical care, including admission to the intensive care unit (ICU). It is characterized by fatal sequelae and high mortality. Currently, insufficient evidence exists to support the use of any systemic adjuvant therapy, such as cyclophosphamide, intravenous immunoglobulin (IVIg), or corticosteroids. However, plasmapheresis has been increasingly valued by clinicians due to its significant efficacy and little adverse side effects. To assess the efficacy of such treatment, 28 patients who were diagnosed with TEN or SJS/TEN overlap were continuously recruited in the ICU from February 2009 to August 2016. These patients including both children and adults were randomly divided into two groups based on whether or not plasmapheresis therapy was performed after admission, which resulted in a plasmapheresis group (n=13) and a non-plasmapheresis group (n=15). Severity of the disease and the efficacy of treatments were evaluated by the severity-of-illness score for TEN. The results indicated that plasmapheresis may be superior to conventional therapies, such as IVIg or corticosteroids. Furthermore, plasmapheresis combined with other treatments might not be advantageous compared to the effect of plasmapheresis alone.

The role of two-sided splinting for recalcitrant paediatric post-burn hand flexion contracture: a case report.

Author(s): Prasetyono, Toh; Caroline, I

Source: Annals of the Royal College of Surgeons of England; Jul 2017; vol. 99 (no. 6); p. e185

Publication Type(s): Journal Article

Available in full text at [Annals of the Royal College of Surgeons of England \[Ann R Coll Surg Engl\]](#)
NLMUID: 7506860 - from EBSCOhost

Abstract:A 2-year-old boy presented to the plastic and reconstructive surgery outpatient clinic with bilateral post-burn hand flexion contracture. The contracture had been released twice elsewhere.

The third surgical repair on one hand at a time was conducted by the author (TOHP). However, inadequate compliance to the postoperative splinting and exercise led to the recurrence of the contracture in the following year. A customised two-sided splint was therefore created to ensure proper placement and compliance. Reinforcement to the parents to encourage the boy to practise active exercise on demand was also an integral part of the management. Good functional and cosmetic outcome were presented at 1-year follow-up. This case highlights the value of a two-sided splint for the management of post-burn hand flexion contracture in children whose compliance is inevitably cannot be guaranteed.

Burn patients' return to daily activities and participation as defined by the International Classification of Functioning, Disability and Health: A systematic review.

Author(s): Osborne, Candice L.; III Meyer, Walter J.; Ottenbacher, Kenneth J.; Arcari, Christine M.

Source: Burns (03054179); Jun 2017; vol. 43 (no. 4); p. 700-714

Publication Type(s): Academic Journal

Abstract: The World Health Organization's International Classification of Functioning, Disability and Health (ICF) is a universal classification system of health and health-related domains. The ICF has been successfully applied to a wide range of health conditions and diseases; however, its application in the field of burn recovery has been minimal. This systematic review uses the domains of the ICF component 'activities and participation' to explore: (1) the extent to which return to daily activities and community participation after burn has been examined in the pediatric population, (2) the most common assessments used to determine activity and participation outcomes, and (3) what activity and participation areas are most affected in the pediatric burn population after discharge from acute care. Results determined that it is difficult to draw overarching conclusions in the area of return to 'activities and participation' for children with burn based on the paucity of current evidence. Of the studies conducted, few examined the same subtopics or used similar measurements. This suggests a need for more robust studies in this area in order to inform and improve burn rehabilitation practices to meet the potential needs of burn patients beyond an acute care setting.

Cost-effectiveness of silver dressings for paediatric partial thickness burns: An economic evaluation from a randomized controlled trial.

Author(s): Gee Kee, E.; Stockton, K.; Kimble, R.M.; Cuttle, L.; McPhail, S.M.

Source: Burns (03054179); Jun 2017; vol. 43 (no. 4); p. 724-732

Publication Type(s): Academic Journal

Abstract: Background: Partial thickness burns of up to 10% total body surface area (TBSA) in children are common injuries primarily treated in the outpatient setting using expensive silver-containing dressings. However, economic evaluations in the paediatric burns population are lacking to assist healthcare providers when choosing which dressing to use. The aim of this study was to conduct a cost-effectiveness analysis of three silver dressings for partial thickness burns $\leq 10\%$ TBSA in children aged 0-15 years using days to full wound re-epithelialization as the health outcome. Method: This study was a trial based economic evaluation (incremental cost effectiveness) conducted from a healthcare provider perspective. Ninety-six children participated in the trial investigating Acticoat™, Acticoat™ with Mepitel™ or Mepilex Ag™. Costs directly related to the management of partial thickness burns $\leq 10\%$ TBSA were collected during the trial from March 2013 to July 2014 and for a one year after re-epithelialization time horizon. Incremental cost effectiveness ratios were estimated and dominance probabilities calculated from bootstrap resampling trial data. Sensitivity analyses were conducted to examine the potential effect of accounting for infrequent, but high cost, skin grafting surgical procedures. Results: Costs (dressing, labour, analgesics, scar management) were considerably lower in the Mepilex Ag™ group (median AUD\$94.45) compared to the Acticoat™

(median \$244.90) and Acticoat™ with Mepitel™ (median \$196.66) interventions. There was a 99% and 97% probability that Mepilex Ag™ dominated (cheaper and more effective than) Acticoat™ and Acticoat™ with Mepitel™, respectively. This pattern of dominance was consistent across raw cost and effects, after a priori adjustments, and sensitivity analyses. There was an 82% probability that Acticoat™ with Mepitel dominated Acticoat™ in the primary analysis, although this probability was sensitive to the effect of skin graft procedures. Conclusion: This economic evaluation has demonstrated that Mepilex Ag™ was the dominant dressing choice over both Acticoat™ and Acticoat™ with Mepitel™ in this trial-based economic evaluation and is recommended for treatment of paediatric partial thickness burns ≤10% TBSA.

Partial-thickness scalds in children: A comparison of different treatment strategies.

Author(s): de Graaf, E.; van Baar, M.E.; Baartmans, M.G.A.; Scholten-Jaegers, S.M.H.J.; Nieuwenhuis, M.K.; Eshuis, J.; Hiddingh, J.; Beerthuizen, G.I.J.M.; van der Vlies, C.H.

Source: Burns (03054179); Jun 2017; vol. 43 (no. 4); p. 733-740

Publication Type(s): Academic Journal

Abstract: Aim: The aim of this study was to compare the clinical outcomes of different treatment strategies for children with partial-thickness scalds at two burn centers. At the first burn center, these burns were treated with a hydrofiber dressing (Aquacel®, Convatec, Inc.®, Princeton, NJ, USA) or silver sulfadiazine (SSD, Flammazine®, Sinclair IS Pharma, London, UK Pharmaceuticals), while at the second burn center, cerium nitrate-silver sulfadiazine (CN-SSD, Flammacerium®, Sinclair IS Pharma, London, UK Pharmaceuticals) was used. Methods: A two-center retrospective study was conducted of children admitted between January 2009 and December 2013 for partial-thickness scalds up to 10% TBSA who were treated primarily with a hydrofiber dressing or silver sulfadiazine (Burn Center Rotterdam) vs. cerium nitrate-silver sulfadiazine (Burn Center Groningen). The Dutch Burn Repository R3 and the electronic medical records of the study population were used for data extraction. The primary outcome was the time to wound healing. The secondary outcomes were the length of hospital stay, wound infection, and surgical treatment. Results: The time to wound healing differed between the groups (HR=1.46, 95%CI 1.17-1.82); the shortest time to wound healing was observed in the patients treated with CN-SSD (median 13 days), compared with 15 days for the patients treated with hydrofiber and 16 days for the patients treated with SSD (p<0.01). The length of stay was significantly shorter for the hydrofiber patients (medians: hydrofiber 3 days, SSD 10 days and CN-SSD 7 days; p<0.01), but their outpatient treatment period was significantly longer (medians: hydrofiber 12 days, SSD 6 and CN-SSD 4 days; p<0.01). The proportion of surgeries and the mean time to surgery was similar between the burn centers. Conclusions: This study compared different burn centers' treatment strategies for children with partial-thickness scalds and found a shorter time to wound healing in the CN-SSD group. Patients treated with hydrofiber had a shorter clinical period in comparison with the SSD and CN-SSD patients. The results of CN-SSD are promising and warrant further study. A prospective study is needed to gain full insight into the merits and drawbacks of the treatment strategies. This will allow clinicians to make full use of the strengths of particular treatments to benefit specific patients.

Dressing changes in a burns unit for children under the age of five: A qualitative study of mothers' experiences.

Author(s): Morley, Jessica; Holman, Natalie; Murray, Craig D.

Source: Burns (03054179); Jun 2017; vol. 43 (no. 4); p. 757-765

Publication Type(s): Academic Journal

Abstract: This study aimed to investigate the experiences of mothers who had attended their child's burn dressing changes. Participants were recruited from a burns unit based within a children's

hospital. Face-to-face interviews were conducted with five mothers of children under the age of five who had undergone a series of dressing changes taking place on the burns unit. The interview guide explored parents' experience of initial and subsequent dressing changes. Participants were prompted to explore their expectations, thoughts, feelings and behaviours associated with these experiences. The interviews were recorded and transcribed verbatim. Transcripts were analysed using interpretative phenomenological analysis. The analysis identified four themes: 'needing to fulfil the responsibilities associated with being a mother'; 'emotional synchrony between mother and child'; 'being informed and knowing what to expect'; and 'the importance of establishing rapport with nurses performing dressing changes'. Findings from this research can inform services to help optimise mothers' experiences of dressing changes in this stage of pediatric burn care.

Effects of different duration exercise programs in children with severe burns.

Author(s): Clayton, Robert P.; Wurzer, Paul; Andersen, Clark R.; Mlcak, Ronald P.; Herndon, David N.; Suman, Oscar E.

Source: Burns (03054179); Jun 2017; vol. 43 (no. 4); p. 796-803

Publication Type(s): Academic Journal

Abstract:Introduction: Burns lead to persistent and detrimental muscle breakdown and weakness. Standard treatment at our institution includes a voluntary 12-week rehabilitative exercise program to limit and reverse the effects of increased muscle catabolism. In the present work, we investigated if different durations of exercise, 6 or 12 weeks, produce comparable improvements in muscle strength, body composition, and cardiopulmonary fitness. Methods: We prospectively enrolled and randomized patients with $\geq 30\%$ total body surface area (TBSA) burned to receive 6 or 12 weeks of exercise rehabilitation. Patients were evaluated for muscle strength, oxygen consumption capacity, and lean body mass at discharge (n=42) and after exercise. After 6 weeks (n=18) or 12 weeks (n=24) of exercise training, leg muscle strength was assessed as peak torque per body weight using a Biodex isokinetic dynamometer. Oxygen consumption capacity, measured as peak VO₂, was studied using a standard treadmill-based test, and lean body mass was determined using dual-energy X-ray absorptiometry. Results: Significant improvements in muscle strength, peak VO₂, and lean body mass were seen after 6 weeks of exercise training (p<0.001), with only significant improvements in peak VO₂ being seen after 6 weeks more of training. Conclusion: These data suggest that a 6-week rehabilitative exercise program is sufficient for improving muscle strength, body composition, and cardiopulmonary fitness in pediatric burn patients. However, continuation of at- or near-home cardiopulmonary training following the 6 weeks of at-hospital rehabilitation may be useful.

Pediatric Firework-Related Injuries Presenting to United States Emergency Departments, 1990-2014.

Author(s): Billock, Rachael M.; Chounthirath, Thiphalak; Smith, Gary A.

Source: Clinical Pediatrics; Jun 2017; vol. 56 (no. 6); p. 535-544

Publication Type(s): Academic Journal

Abstract:This study characterizes the epidemiology of nonfatal pediatric firework-related injuries in the United States among children and adolescents by analyzing data from the National Electronic Injury Surveillance System from 1990 through 2014. During this 25-year period, an estimated 136 991 (95% CI = 113 574-160 408) children <20 years old were treated in US emergency departments for firework-related injuries. The annual injury rate decreased significantly by 30.4% during this period. Most of those injured were male (75.7%), mean patient age was 10.6 years, and 7.6% required hospital admission. The hands (30.0%) were the most commonly injured body region, followed by head and neck (22.2%), and eyes (21.5%). Sixty percent of injuries were burns. Injuries were most commonly associated with firecrackers (26.2%), aerial devices (16.3%), and sparklers

(14.3%). Consumer fireworks pose a serious injury risk to pediatric users and bystanders, and families should be encouraged to attend public firework displays rather than use consumer fireworks.

Agreement on what to measure in randomised controlled trials in burn care: Study protocol for the development of a core outcome set

Author(s): Young A.; Brookes S.; Blazeby J.; Rumsey N.

Source: BMJ Open; Jun 2017; vol. 7 (no. 6)

Publication Type(s): Article

Available in full text at [BMJ Open](#) - from ProQuest

Abstract:Introduction: In 2004, nearly 11 million severely burn-injured patients required medical care worldwide. Burns cause prolonged hospitalisation and long-term disability. Although mortality has been reduced, morbidity remains significant. Burn care is costly and decision-making is challenging. A range of procedures are performed at different times after injury; new technology is emerging and alternate care pathways are regularly introduced. Data to guide evidence-based decision-making are lacking. Researchers use different outcomes to assess recovery, so it is not possible to combine trial information to draw meaningful conclusions. Early recovery measures include length of hospital stay, healing time and treatment complications. Longer-term outcomes include issues with function, cosmesis and psychological health. Reporting an agreed set of the most important outcomes (core outcome set (COS)) in randomised controlled trials (RCTs) will allow effective evidence synthesis to support clinical decisions. Patient input will ensure relevance. Methods and analysis: The aim is to produce a burn COS for RCT reporting. A long list of outcomes will be identified through systematic reviews of clinical and patient-reported outcomes. Additional outcomes will be identified from interviews with patients over 10 years, parents of children of any age and multidisciplinary professionals. A two-stage modified Delphi exercise will be undertaken to prioritise and condense the list, with patients (n=150) at different stages of recovery. We will also include nursing, therapy (n=100) and medical staff (n=100). A reduced list will be taken to consensus meetings with families and clinical staff to achieve a final COS. Ethics and dissemination: A COS will reduce outcome reporting heterogeneity in burn care research, allowing more effective use of research funding and facilitating evidence synthesis and evidence-based clinical decision-making. Stakeholders will include journal editors, health commissioners, researchers, patients and professionals. The study has ethical approval and is registered with Core Outcome Measures in Effectiveness Trials Initiative (<http://www.comet-initiative.org/studies/details/798?result=true>). Copyright © 2017 Article author(s).

Persistence of insulin resistance following major pediatric burn injury

Author(s): Meyer W.J.; Rodriguez R.A.; Ojeda S.; Huddleston J.; Herndon D.N.

Source: Endocrine Reviews; Jun 2017; vol. 38 (no. 3)

Publication Type(s): Conference Abstract

Abstract:Introduction: Following major burn injury some children develop an abnormal oral glucose tolerance test (OGTT) characterized by elevated glucose and/or elevated insulin concentrations. The purpose of this study is to determine the time course of these OGTT abnormalities. Methods: A retrospective review of OGTT's in pediatric burn survivors [TBSA= 49.6% +/- 21.8%] was analyzed post burn injury at: 0-90, 90-270, 270-450, 450-640, 640-821 and 821-1711 days. The abnormalities observed were either a fasting plasma glucose ≥ 100 mg/dl, a glucose at 30, 60 or 90 minutes ≥ 180 mg/dl, a glucose at 120 min ≥ 140 mg/dl or normal fasting insulin ≥ 20 uIU/ml, or at other time points insulin's ≥ 70 uIU/ml. Six percent of the children did not receive insulin measurements due to their low body weight. OGTT's were repeated in a following time period if there was an abnormality

noted in the first 90 days. Initially those who were normal were still normal when retested or were assumed to be normal if not retested. Results: There were 292 children (66% males, Hispanics 90% TBSA was 49.6%+/-21.8%, 0-5yr, n=141 & 6-19yr, n=151) that were tested at baseline (0-90 days). Per each time point the percent of children with elevated glucose concentrations at the time of testing were the following: 36% (0-90), 11% (90-270), 8% (450-670), 2% (670-821) and 1% (821-1711 days). None of those individuals less than 5 years of age had persistent glucose abnormalities past 90 days. There were 274 patients tested at baseline (0-90 days) for insulin response to glucose ingestion; 190 patients had abnormal insulin response in the OGTT in the first 90 days. Of those with abnormal insulin responses 84 patients returned and were retested. Essentially all of these [83 (98.8%)] remained with abnormal insulin concentrations during OGTT. All of these were in the 6-19 year age group. Conclusion: Post major burn injury, children up to 5 years of age at the time of injury are unlikely to have persistent abnormalities of the OGTT past 90 days. Survivors of major burn injury 6-19 years of age at the time injury who have abnormal glucose tolerance test at 90 days are very likely to have persistent insulin resistance. These results suggest that children surviving major burn injury should be followed for persistent abnormal glucose and insulin responses to OGTT.

Drug-induced Stevens-Johnson syndrome and toxic epidermal necrolysis in children: 20 years study in a tertiary care hospital

Author(s): Techasatian L.; Panombualert S.; Uppala R.; Jetsrisuparb C.

Source: World Journal of Pediatrics; Jun 2017; vol. 13 (no. 3); p. 255-260

Publication Type(s): Article

Abstract:Background: Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are severe lifethreatening skin conditions. The most common cause of these manifestations is medications. Beside discontinued of the culprit drug, systemic corticosteroids were used as a primary treatment option among pediatric population. This study aimed to explore causative drugs (drug group/ latent period), treatments, complications, and treatment outcome (morbidity, mortality, length of hospital stay) of SJS and TEN in children. Methods: A retrospective chart was reviewed during the period of 1992 to 2012 at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, Thailand. SJS and TEN were clinically diagnosed and confirmed by pediatric dermatologists. Other possible causes other than druginduced SJS and TEN were excluded. Results: A total of 30 patients was recorded, including 24 (80%) SJS patients and 6 (20%) TEN patients. The mean age was 6.9 years (SD 4.4). Male to female ratio was 1.5:1. Antiepileptic drug group was the most common causative drug (n=18, 60%), followed by antibiotic drug group (n=8, 26.6%), and others (n=4, 13.3%) which included nonsteroidal antiinflammatory drugs (NSAIDs) and chemotherapy drugs. Systemic corticosteroids were used in 29 patients (96.6%). Intravenous immunoglobulin was used in one TEN patient (3.3%). There was a medium correlation between time to treatment (systemic corticosteroids) and the length of hospital stay (Spearman correlation coefficient=0.63, P=0.005). Two TEN patients (6.6%) died. Conclusions: Carbamazepine was the most common causative drug of SJS and TEN in our study. The severity of skin detachment is not correlated to severity of ocular findings. However, the persistent of ocular complications up to one year is suggested for promptly appropriate ocular treatment in all SJS and TEN patients. Our data suggested that early administration of systemic corticosteroid may reduce the length of hospital stay and should be considered for the treatment of pediatric druginduced SJS and TEN. Copyright © 2016, Children's Hospital, Zhejiang University School of Medicine and Springer-Verlag Berlin Heidelberg.

Oxcarbazepine-induced Stevens-Johnson syndrome: A pediatric case report

Author(s): Beken B.; Can C.; Yazicioglu M.; Orencik A.; Can N.

Source: Oxford Medical Case Reports; Jun 2017; vol. 2017 (no. 6); p. 79-81

Publication Type(s): Article

Available in full text at [Oxford Medical Case Reports](#) - from Highwire Press

Abstract:Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis are two rare but life-threatening diseases characterized by detachment of epidermis, bullous skin lesions and mucous membrane erosions. Anti-epileptic drugs are highly suspected to be the causative agents. Although carbamazepine (CBZ) is the most associated anti-epileptic drug, oxcarbazepine (OXC), which is a monohydrated derivative of CBZ, is proposed to be safer because of the different metabolism of the two drugs. Herein, we report a case of SJS induced by oxcarbazepine. A 6-year-old boy with benign rolandic epilepsy, admitted to our hospital with generalized maculopapular rash after starting oxcarbazepine. The diagnosis of SJS was made with cytotoxic skin lesions and mucous membrane involvement. After discontinuing of the drug and topical corticosteroid initiation, the lesions were improved. We report this case to attract attention to the serious side effect of this anti-epileptic drug. Copyright © The Author 2017.

U.S. Pediatric Burn Patient 30-Day Readmissions

Author(s): Wheeler K.K.; Shi J.; Nordin A.B.; Xiang H.; Groner J.I.; Fabia R.; Thakkar R.K.

Source: Journal of Burn Care and Research; Jun 2017

Publication Type(s): Article In Press

Abstract:The objective of the study was to determine unscheduled 30-day readmission rates for pediatric burn patients and to identify readmission reasons. We used the 2013 to 2014 National Readmission Database to produce 30-day all-cause unscheduled readmission rates by patient and hospital characteristics. Readmission risk factors were evaluated with multivariable logistic regression. An estimated 11,940 U.S. pediatric burn patients were discharged in January to November 2013 and 2014, and 325 had unscheduled readmissions within 30 days (2.7%; 95% confidence interval [CI], 1.5-3.9). This rate is higher than that seen in pediatric trauma patients (1.7%; $P = 0.04$). Higher rates were seen in children with TBSA burned $\geq 10\%$ (4.1%; 95% CI, 2.3-6.0) and patients with third-degree burns (5.5%; 95% CI, 1.4-9.6). The majority (86%) had index admissions in hospitals treating 100 or more burn patients annually, and 98% returned to the same hospital. Over two-thirds had an operating room procedure during their readmission; 15% had infections. The highest adjusted odds of readmission (AOR = 2.7; 95% CI, 1.7-4.2) was for patients with third-degree burns. When compared with patients with lengths of stay (LOS) of 1 day, those with LOS of 2 to 3 days had a higher odds (AOR = 1.7; 95% CI, 1.03-2.9), but the AOR was not different for those with LOS > 3 days. TBSA, index operating room procedure, and patient residence were associated with readmission. This national dataset enhances our ability to predict patients at risk for unscheduled readmission and to plan for appropriate patient discharge, potentially reducing readmissions. Copyright © 2017 The American Burn Association

Resting beta-Adrenergic Blockade Does Not Alter Exercise Thermoregulation in Children With Burn Injury: A Randomized Control Trial

Author(s): Rivas E.; McEntire S.J.; Herndon D.N.; Suman O.E.

Source: Journal of Burn Care and Research; Jun 2017

Publication Type(s): Article In Press

Abstract:The objective of this study was to test the hypothesis that propranolol, a commonly prescribed beta-blocker to burned children, in combination with exercise-heat stress, increases the risk of heat illness and exercise intolerance. In a randomized double-blind study, propranolol was given to 10 burned children, and placebo was given to 10 additional burned children (matched for TBSA burned; mean \pm SD, 62 \pm 13%), while nonburned children served as healthy controls. All

groups were matched for age and body morphology (11.2 +/- 3.0 years; 146 +/- 19 cm; 45 +/- 18 kg; 1.3 +/- 0.4 m). All children exercised in hot conditions (34.3 +/- 1.0degreeC; 26 +/- 2% relative humidity) at 75% of their peak aerobic capacity. At the end of exercise, none of the groups differed for final or change from baseline intestinal temperature (38.0 +/- 0.5degreeC; 0.021 +/- 0.01DELTAdegreeC.min), unburned (37.0 +/- 0.6degreeC) and burned skin temperatures (36.9 +/- 0.7degreeC; nonburn group excluded), heat loss (20.5 +/- 18 W m), whole-body thermal conductance (118 +/- 113 W m), or physiological strain index (5.6 +/- 1). However, burn children exercised less than nonburn group (21.2 +/- 8.6 vs 30 +/- 0.0 min; P Copyright © 2017 The American Burn Association

Pediatric jellyfish envenomation in the Mediterranean Sea

Author(s): Glatstein M.; Adir D.; Galil B.; Scolnik D.; Rimon A.; Pivko-Levy D.; Hoyte C.

Source: European Journal of Emergency Medicine; Jun 2017

Publication Type(s): Article In Press

Abstract:BACKGROUND: Several species of jellyfish native to the western Indian Ocean have entered the Mediterranean Sea through the Suez Canal. Since the late 1980s, each summer *Rhopilema nomadica* forms swarms as long as 100 km in the southeastern Levant and since the millennium aggregations of additional nonnative jellyfish have been sighted. The aim of this study was to evaluate children seen in the emergency department after jellyfish envenomations and to establish patterns of toxicity associated with this organism. METHODS: A retrospective chart review was performed of all children presenting after jellyfish envenomations to the pediatric emergency department during the jellyfish swarming seasons (June-August) between 2010 and 2015. Extracted data included age, location of envenomation, pain scores, local and systemic manifestations, treatment provided in the emergency department and hospital, and disposition. RESULTS: Forty-one patients fulfilled the inclusion criteria; their ages ranged from 1 to 16 years and the median age was 9.4 years. Clinical manifestations were evident in all patients. Pain, present in 100% of patients, and an erythematous, whip-like, linear rash present in 87.8%, were the most common manifestations. The majority of 'burns' associated with jellyfish stings were first and second degree. The upper limb was affected in 34% and the lower limb was affected in 61% of cases. One patient suffered a sting to the abdomen and three patients suffered a sting to the face. Treatment in the emergency department included pain control, with nonsteroidal anti-inflammatory drugs and opiates, and antihistamines and topical corticosteroids in some cases. Nearly 49% of patients were seen during the summer of 2015 alone and seven patients in this group needed hospitalization. Reasons for hospitalization included systemic symptoms such as fever, chills, tachycardia, and muscle spasms. Two patients developed severe cellulitis, one patient had an anaphylactic reaction, and one was admitted to the ICU after suffering an anaphylactic reaction to a sting sustained while surfing. CONCLUSION: The prevalence of the jellyfish swarms and the severity of clinical manifestations because of their envenomations suggest that it should be considered as a health hazard in the Mediterranean Sea. We call for public health authorities in affected countries to initiate a health hazards database, familiarize medical and healthcare staff with the clinical syndromes, train medical and healthcare staff in appropriate treatment, and initiate and continue public awareness campaigns. Copyright © 2017 Wolters Kluwer Health, Inc. All rights reserved.

Feto-maternal Outcomes in Pregnancies Complicated by Thermal Burns

Author(s): Mittal P.; Ara A.; Kripa S.; Tiwari V.K.

Source: Journal of Obstetrics and Gynecology of India; Jun 2017 ; p. 1-6

Publication Type(s): Article In Press

Abstract:Background: Burns in pregnancy can be a potentially life-threatening condition for both mother and baby. Human physiology is altered during pregnancy and burns add further stress leading to diminished maternal reserves. Very few studies have been reported for management of such patients. Materials and Methods: This was a prospective based study carried out in Department of Burns and Plastic Surgery in collaboration with Department of Obstetrics and Gynaecology and Department of Pediatrics for a period of 20 months from December 2011 to July 2013. Pregnant women with thermal injuries more than 15% TBSA were included in the study. Patients with coexisting obstetrics complications and burns other than thermal were excluded. Results: Out of 3397 female patients of burns admitted, 1382 patients were in reproductive groups, 1116 were married and 67 were pregnant; these were enrolled. Maternal and fetal outcome is inversely linked with the TBSA of the mother (p 30-50% maternal mortality was 44%, and in 50-70% maternal mortality was 83% and no mother survived in >70%. In TBSA 30-50%, fetal mortality was 72%. Only one baby survived in 50-70% TBSA group and one in >70% TBSA group after intensive care in NICU for prematurity. Fetal survival was also dependent on gestational age, and there are better outcomes in late trimesters. Conclusion: Maternal and fetal outcome are directly related to TBSA of mother, and best care can be offered to such patients with a multidisciplinary team-based approach. Copyright © 2017 Federation of Obstetric & Gynecological Societies of India

A Pediatric Burn Outpatient Short Stay Program Decreases Patient Length of Stay With Equivalent Burn Outcomes

Author(s): Zens T.; Yan A.; Lee C.; Schmitz C.; Faucher L.; Gibson A.

Source: Journal of Burn Care and Research; Jun 2017

Publication Type(s): Article In Press

Abstract:Traditionally, small pediatric burns are managed with inpatient admission and daily dressing changes. In 2011, our burn center implemented an outpatient short stay (OSS) program in which small pediatric burns were managed as an outpatient utilizing Mepilex Ag dressings changed under moderate sedation every 5 to 7 days. Pediatric burn cases were queried for 2 time periods: before the OSS program (2009-2010) and after the OSS program (2013-2014). Burns > 15% TBSA, children with polytrauma, and children > 10 years old were excluded. Independent t tests and chi-square tests were conducted to analyze differences in patient demographics, burn management, and burn outcomes between these groups. Two hundred nineteen cases were included in the analysis (77 pre-OSS and 142 post-OSS). There was no difference in patient age (P = 0.872) or TBSA (P = 0.786) between the groups. The post-OSS group had shorter inpatient length of stay (2.93 days vs 5.21 days; P Copyright © 2017 The American Burn Association

The Impact of Legislation on Gas Can- and Mattress-Related Burn Injuries

Author(s): Levi K.; Brandon B.; Corinne P.-A.; Lucy W.

Source: Journal of Burn Care and Research; Jun 2017

Publication Type(s): Article In Press

Abstract:Burn prevention program success requires thorough evaluation of intervention outcomes. The impact of 2 engineering-specific burn prevention regulations, the Children's Gasoline Burn Prevention Act, and the Standard for the Flammability of Mattress Sets will be assessed. Records from 1997 to 2015 within the Consumer Product Safety Commission's (CPSC) National Electronic Injury Surveillance System (NEISS) were reviewed. After identifying gas can- and mattress-involved burn injuries, injury incidence was estimated by utilizing survey sampling weights associated with each record. Logistic regression, incorporating estimated injury incidence and adjusting for gender and age, was performed to test for change in injury risk following these regulations. Within NEISS, there were 493 burns involving gas cans, yielding an estimated 19,339 injuries (95% confidence

interval [CI], 15,781-22,896) during the 19-year study period. The odds of a gas can burn injury after legislation decreased by 67% for children younger than 5 years (odds ratio [OR], 0.33; 95% CI, 0.16-0.66; P = 0.0018). There was no significant change in risk for persons 5 years and older (OR, 1.07; 95% CI, 0.80-1.41; P = 0.66). During the same time, there were 219 NEISS burns involving mattresses, yielding an estimated 6864 injuries (95% CI, 5071-8658). The odds of a mattress burn injury following legislation enactment decreased by 31% for all ages (OR, 0.69; 95% CI, 0.51-0.94; P = 0.02). Both regulations decreased the odds of injury in their target populations. This study demonstrates that passive interventions involving engineering standards remain a powerful tool for burn prevention and should be the focus of future efforts to improve burn care. Copyright © 2017 The American Burn Association

The global burden of child burn injuries in light of country level economic development and income inequality.

Author(s): Sengoelge, Mathilde; El-Khatib, Ziad; Laflamme, Lucie

Source: Preventive medicine reports; Jun 2017; vol. 6 ; p. 115-120

Publication Type(s): Journal Article

Abstract: Child burn mortality differs widely between regions and is closely related to material deprivation, but reports on their global distribution are few. Investigating their country level distribution in light of economic level and income inequality will help assess the potential for macro-level improvements. We extracted data for child burn mortality from the Global Burden of Disease study 2013 and combined data into 1-14 years to calculate rates at country, region and income levels. We also compiled potential lives saved. Then we examined the relationship between country level gross domestic product per capita from the World Bank and income inequality (Gini Index) from the Standardized World Income Inequality Database and child burn mortality using Spearman coefficient correlations. Worldwide, the burden of child burn deaths is 2.5 per 100,000 across 103 countries with the largest burden in Sub-Saharan Africa (4.5 per 100,000). Thirty-four thousand lives could be saved yearly if all countries in the world had the same rates as the best performing group of high-income countries; the majority in low-income countries. There was a negative graded association between economic level and child burns for all countries aggregated and at regional level, but no consistent pattern existed for income inequality at regional level. The burden of child burn mortality varies by region and income level with prevention efforts needed most urgently in middle-income countries and Sub-Saharan Africa. Investment in safe living conditions and access to medical care are paramount to achieving further reductions in the global burden of preventable child burn deaths.

Is there any place for spontaneous healing in deep palmar burn of the child?

Author(s): Chateau, J; Guillot, M; Zevounou, L; Braye, F; Foyatier, J-L; Comparin, J-P; Voulliaume, D

Source: Annales de chirurgie plastique et esthetique; Jun 2017; vol. 62 (no. 3); p. 238-244

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 27777134

Abstract: Child palm burns arise by contact and are often deep. The singular difficulty of such a disease comes from the necessity of the child growth and from the potential occurrence of constricted scars. In order to avoid sequelae, the actual gold standard is to practice an early excision of the burn, followed by a skin graft. The aim of this study is to evaluate the results of spontaneous healing combined with rehabilitation versus early skin grafting and rehabilitation concerning the apparition of sequelae. We performed a retrospective study in two burn centers and one

rehabilitation hospital between 1995 and 2010. Eighty-seven hands have been included in two groups: one group for spontaneous healing and the other group for excision and skin grafting. Every child benefited from a specific rehabilitation protocol. The two main evaluation criteria were the duration of permanent splint wearing and the number of reconstructive surgery for each child. The median follow-up duration is about four years. The two groups were comparable. For the early skin grafting group, the splint wearing duration was $\frac{1}{3}$ longer than for the spontaneous healing group. Concerning the reconstructive surgery, half of the grafted hands needed at least one procedure versus $\frac{1}{5}$ of spontaneous healing hands. Our results show the interest of spontaneous healing in palmar burn in child, this observation requires a specific and intense rehabilitation protocol.

Exercise: Relative Risk

The relative risk is the ratio of probability of an event (a specified outcome) occurring in one group (i.e. those exposed to a particular intervention) compared to those in another group (i.e. those not exposed – a control group).

The relative risk can be interpreted using the following chart. First, you must determine whether the event (the outcome measure) is adverse or beneficial.

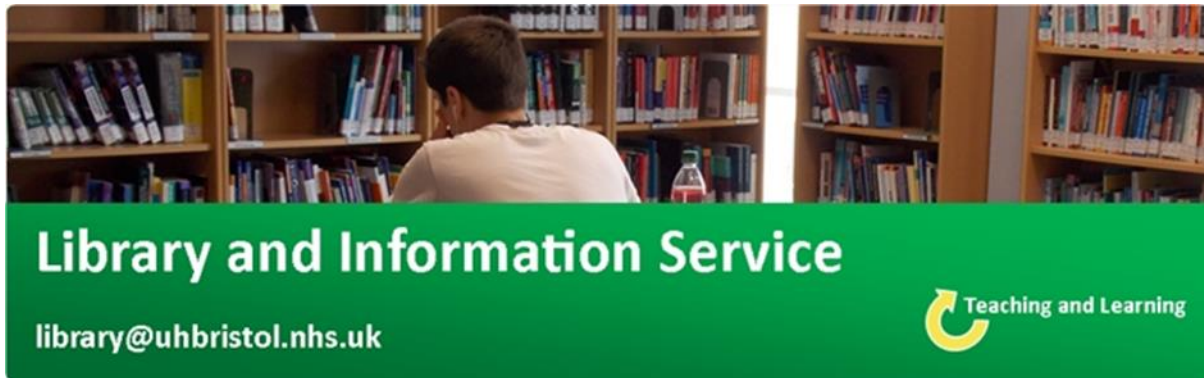
Relative Risk	Adverse outcome (e.g. death)	Beneficial outcome (e.g. recovery of limb function)
<1	Intervention better than control	Intervention worse than control
1	Intervention no better or worse than control	Intervention no better or worse than control
>1	Intervention worse than control	Intervention better than control

Have a go at interpreting the relative risks for these three studies using the chart above. Is the intervention better or worse than the control?

	Intervention	Population	Outcome measure (think: adverse or beneficial?)	Relative Risk
Study 1	Drug X	Adults at risk of a heart attack	Heart attack	1.2
Study 2	Therapy programme Y	Smokers	Smoking cessation	0.8
Study 3	Probiotic Z	Children on antibiotics	Diarrhoea	0.3

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Answers: Study 1: worse; Study 2: worse; Study 3: better



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