

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/burns

Letter to the Editor

Just the tip of the iceberg — Inconsistent information on a global scale and the need for a “standard” model of burn 1st aid

In: “Consistency an issue?” — A review of UK burns service online information on burns first aid” (Burns Vol 45 1 Feb 2019) Kilshaw and colleagues provide a timely reminder of continuing problems with selling the message of burn 1st aid (BFA). However, the article reveals only a microcosm of a much larger and far more complex situation than inconsistent online presentation of domains among UK burns services.

Currently, there are multiple factors contributing to inconsistencies in BFA information relayed to the public not least of which is the lack of consensus on parameters of BFA — i.e. method, temperature, duration and delayed benefit of cooling. [1,2] (Lack of consensus is also evident in the choice of preferred dressing post cooling [3], traditionally also considered an element of BFA) [4].

The lack of consensus is apparent in published recommendations from a range of agencies including burns associations, resuscitation councils, hospital burns units, national, regional and state burns services, government health agencies, non-profit foundations, charity and support groups, 1st aid organisations, military institutions and the UN as well as many differences seen in burn care guidelines for practice in EMS [5].

Decision making methods also seem to vary and many recommendations are shaped by local interpretations of the evidence base, practical considerations, parroting of models from “expert” bodies or subject to commercial sponsorship arrangements. This occurs in the absence of any national regulatory body with the oversight capabilities to marshal the plethora of suggested approaches into a single model or the legislative or medical authority to mandate recommendations to a single responsible agency.

In my presentation at the ANZBA 2018 conference, “Towards a standard model of burn 1st aid — one step forwards two steps back” I presented published BFA recommendations from 24 recommending agencies. This data identified 13 different durations for burn wound cooling alone despite best evidence suggesting a “gold standard” of 20min [4].

Data from 46 provider agencies in 6 countries and 3 continents also showed more than 19 different cooling approaches including withholding of cooling altogether, a not uncommon practice in the US EMS. The use of caveats by EMS

and other health care providers on application of cooling and dressing of burns, ostensibly to mitigate hypothermia risk, is also a widespread practice. These include age, TBSA, water temperature, burn depth, availability of clean water and other factors and the data showed 13 or more variations of caveats employed by the sampled agencies [4].

Models of BFA practiced by the public, encouraged by the “click bait” YouTube commentariat and social media platforms as well as entrenched cultural, ethnic and religious influences are well documented in the literature and so diverse and bizarre as to often defy description or quantification [6].

Ethical and practical encumbrances to high level studies like human trials, although a well-known feature of burn research, are particularly problematic in the uncontrolled pre-hospital environment thus also impacting available study data to inform BFA practice. 1 As a result, experimental, animal and observational studies predominate in the current BFA evidence base.

These limitations also have implications in respect of recommendations derived using evidence grading tools like G. R.A.D.E, widely employed by bodies such as the resuscitation councils (e.g. The European Resuscitation Council) [7]. Useable bodies of lower level evidence currently informing in-field BFA practice may not meet inclusion criteria of such tools thus impacting final recommendations [8].

The widespread infiltration of hydrogel burn dressings into many pre-hospital sectors remains an area of concern given the lack of evidence supporting their clinical efficacy. They are widely, though not universally, employed in many EMS jurisdictions and are currently heavily marketed as a “moist wound dressing” to US services where many opt for “dry dressing only” approaches. Their incorporation in “burn” 1st aid kits sold by 1st aid organisations is truly curious and contradicts the very paradigm pioneered by these bodies [4], and recommended in their own teaching programmes — i.e. water cooling is the gold standard [9].

Likewise, sponsorship by hydrogel companies of private sector burns 1st aid and charity run support and education programmes, often in schools, in which company products are incorporated, in some fashion, into the curriculum materials also creates circumstances where mixed messages may arise

[10]. Such programmes also typically limit education to BFA of the poorly defined “minor” burn using size and body region caveats to suggest the insertion point for professional medical intervention. This too may create mixed messages when more serious burns are encountered regarding use of the hydrogel in this setting and belies the crucial role played by the 1st responder in serious burn injury given most minor burns will not require medical intervention in the first place nor have lasting patient outcome implications.

As the co-author of the British Burn Association BFA guidelines and a pre-hospital practitioner and researcher on this topic it is abundantly clear to me urgent attention to the BFA situation is required if patients are to benefit on a large scale from it's clearly established clinical efficacy [11].

Consistent recommendations from the expert burn community and emergency care sector can significantly contribute to dislodgment of the lay public from clinically ineffective practices. Consensus also creates the environment for confident ongoing development exploiting the methodological value of a “default” model, resulting large available study populations, consistency and compliance in practices. The current predicament continues to obstruct the necessary transition to an evidence based “standard model” of BFA [12].

Conflict of interest

The author declares no conflict of interest. The author declares no funding or sponsorship has been received.

REFERENCES

- [1] Harvey LA, Barr ML, Poulos RG, Finch CF, Sherker S, Harvey JG. A population-based survey of knowledge of first aid for burns in New South Wales. *Med J Aust* 2011;195(October (8)):465-8.
- [2] Goodwin NS, Spinks A, Wasiak J. The efficacy of hydrogel dressings as a first aid measure for burn wound management in the pre-hospital setting: a systematic review of the literature. *Int Wound J* 2016;13(August (4)):519-25.
- [3] Wasiak J, Cleland H, Campbell F, Spinks A. Dressings for superficial and partial thickness burns. *Cochrane Database Syst Rev* 2013;(March (3)):CD002106, doi:<http://dx.doi.org/10.1002/14651858.CD002106.pub4>.
- [4] St John Ambulance Association. First Aid. Manual of St John Ambulance Association, the St Andrew's Ambulance Association and the British Red Cross Society. 1969.
- [5] Goodwin NS. Towards a standard model of Burn First Aid - one step forwards, two steps back. Presented to ANZBA International Burns Conference. Brisbane Convention and Exhibition Centre Merivale Street & Glenelg Street, Brisbane, QLD. October 19, 2018. . PPT Document available from URL: https://www.researchgate.net/profile/Nick_Goodwin.
- [6] Burgess JD, Cameron CM, Cuttle L, Tyack Z, Kimble RM. Inaccurate, inadequate and inconsistent: a content analysis of burn first aid information online. *Burns* 2016;42:1671-7.
- [7] Zidemana DA, De Buck EDJ, Singletaryc EM, Cassand P, Chalkias F, Evansg TR, et al. European Resuscitation Council guidelines for resuscitation 2015 section 9. First aid. *Resuscitation* 2015;95:278-87.
- [8] Australian National University, Canberra ACT Australia. Open Research Library. Main webpage: <https://openresearch-repository.anu.edu.au/> Search terms: Irvingetal. 1 page. <https://openresearch-repository.anu.edu.au/bitstream/1885/11135/1/IrvingetalToolsforgradingevidence2013.pdf>. [Accessed 20 January 2019].
- [9] Harish V, Tiwari N, Fisher OM, Li Z, Maitz PKM. First aid improves clinical outcomes in burn injuries: evidence from a cohort study of 4918 patients. *Burns* 2018(October). . In Press. Corrected Proof <https://doi.org/10.1016/j.burns.2018.09.024>.
- [10] Mundipharma 149 Pty Limited GPO Box 5214 Sydney NSW, Australia. 2018. Mundipharma partners with Kidsafe Australia for National Burns Awareness Month. Retrieved from: <https://www.mundipharma.com.au/mundicare-burnaid-partners-with-kidsafe-australia-for-national-burns-awareness-month/> Accessed: Sun January 20, 2019].
- [11] Allison K. The UK pre-hospital management of burn patients: current practice and the need for a standard approach. *Burns* 2002;28:135-42.
- [12] Bennett CV, Maguire S, Nuttall D, Lindberg DM, Moulton S, Bajaj L, et al. First aid for children's burns in the US and UK: an urgent call to establish and promote international standards. *Burns* 2018(September). . In press. Corrected Proof <https://doi.org/10.1016/j.burns.2018.09.003>.

Nicholas S. Goodwin

1 Christina Close, Wheelers Hill, Victoria, 3150, Australia

E-mail address: ng1mg1@optusnet.com.au (N. Goodwin).

Available online xxx

<http://dx.doi.org/10.1016/j.burns.2019.01.009>

© 2019 Elsevier Ltd and ISBI. All rights reserved.