



ACI NSW Agency
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Effective management of post burn itch to produce better physical and psychological outcomes

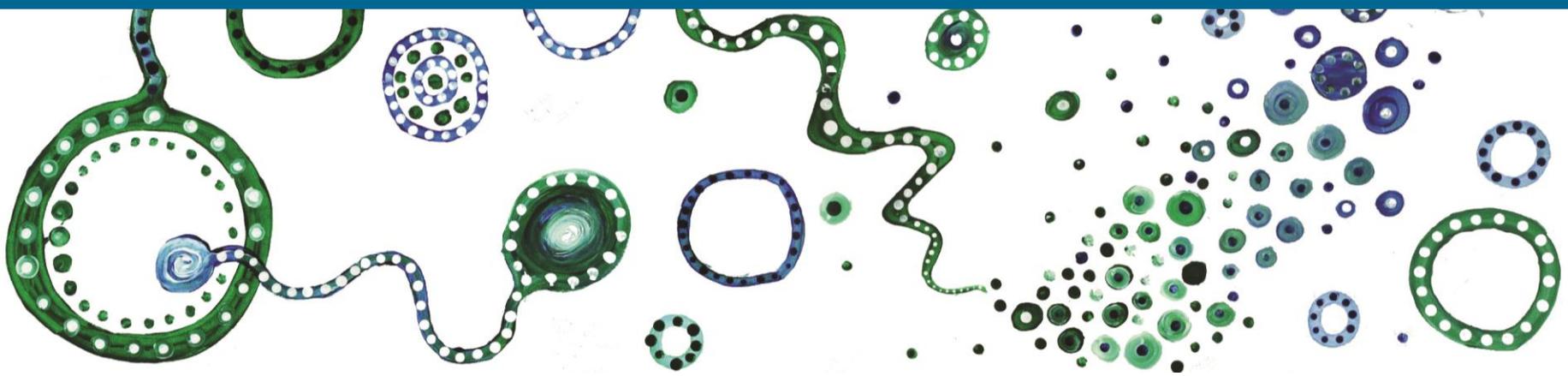
A Systematic Review

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Collaboration.
Innovation.
Better Healthcare.

Acknowledgement

We acknowledge the traditional owners of the land that we work on. We pay our respects to Elders past and present and extend that respect to other Aboriginal peoples present here today.



Background

- Post-burn itch
 - common issue
 - physical and psychological effects
 - Literature shows no clear consensus

Aim

- To identify effective management strategies of post-burn itch to produce better physical and psychological outcomes

Method

- A comprehensive search was completed of PubMed, CINAHL and Scopus databases
- Search terms burn, itch and pruritus
- Example Logic Grid

Burn	Pruritus
MH burns OR TI burn* OR AB burn* OR TI "thermal injury" OR AB "thermal injury"	MH pruritus OR TI pruritus OR AB pruritus OR TI itch OR AB itch

Systematic review question

- ‘What is the effective management of post burn itch to produce better physical and psychological outcomes?’

Inclusion Criteria

- burn patients of all ages - paediatric + adult
- interventions for reduction or treatment of post-burn itch
- pharmacological or non-pharmacological
- acute or post-acute phase of treatment, including rehabilitation and scar revision stages
- not limited by burn size or depth



Exclusion Criteria

- The review excluded studies that
 - Did not meet the inclusion criteria
 - were not available in the English language

Intervention

- Any pharmacological or non-pharmacological interventions
- Aimed at prevention, reduction or treatment of post-burn itch
- All modalities of delivery i.e. oral, intravenous, cutaneous, etc.

Types of Studies

- Any experimental study which focused on the inclusion criteria included
- Randomised controlled trials, non-randomised controlled trials and quasi-experimental.

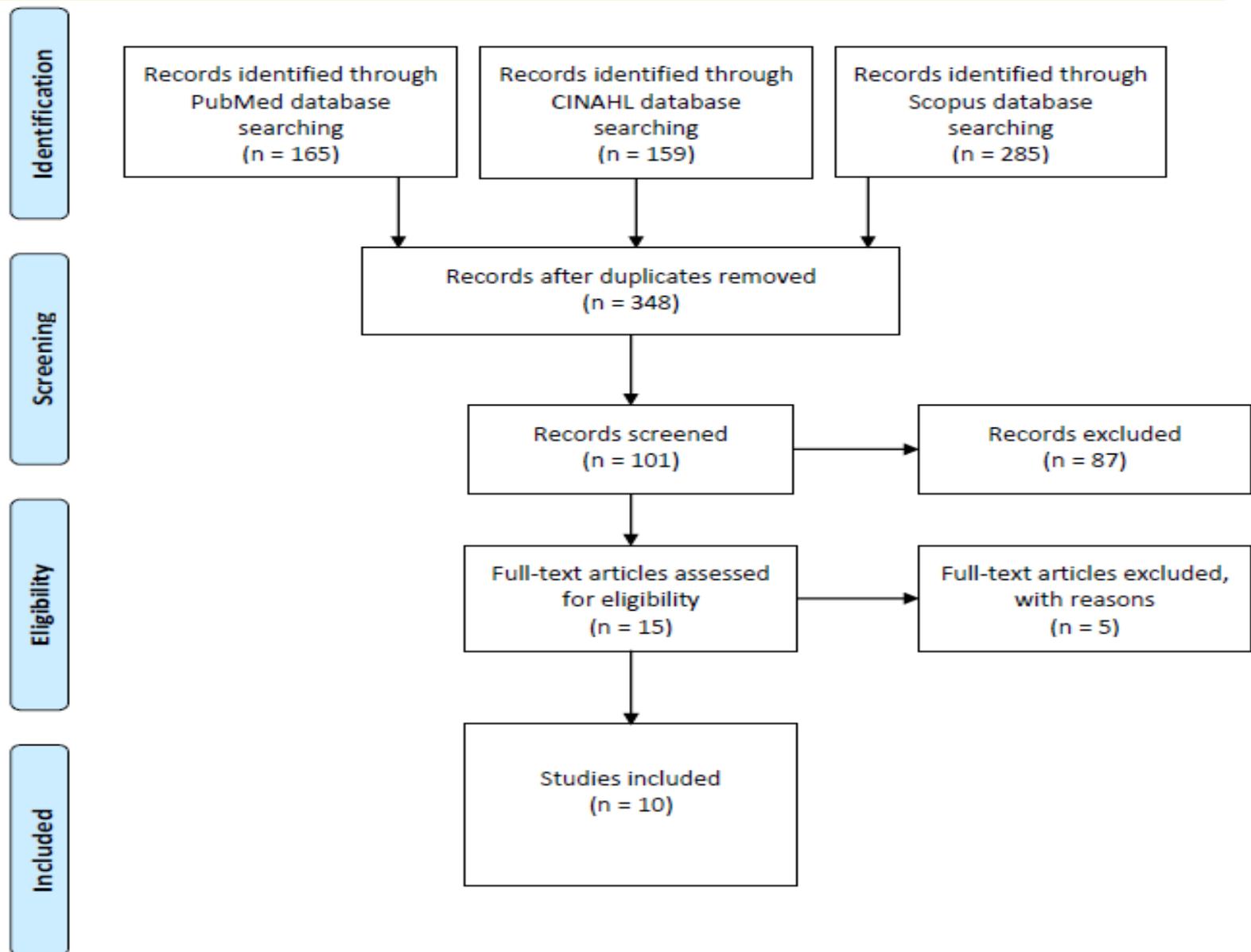
Critical Appraisal

- review of title and abstract
- papers selected for retrieval
- assessed by two independent reviewers for methodological validity
- inclusion using JBI Critical Appraisal Checklist for Experimental Studies
- disagreements between reviewers resolved through discussion
- referral to third reviewer not necessary.

Data

- Data was extracted on
 - population
 - interventions
 - study methods
 - outcomes
- Information analysed
 - meta-analysis was not possible
- Findings presented in narrative form

Results



#	Author,Date, Country	Patient Group	Intervention	Control	Outcomes	Key Results
1	Ahuja et al 2013 India	80 adult (18-60y) >5% TBSA 80% epithelialize or healed <3mth	Pregabalin; cetirizine with pheniramine maleate; pregabalin, cetirizine and pheniramine maleate	Placebo (vit. B complex)	Severity of itch using VAS	VAS itch reduced significantly in pregabalin and combo group Pregabalin effective at reducing itch without sedation Massage with coconut oil can relieve mild itch
2	Nedelec et al 2012 Canada	23 adult epithelialised	Provase moisturiser	control moisturiser	Description of pruritus; Effect of pruritus;	Reduction in itch duration, frequency and number of episodes Provase moisturiser effective in reducing post-burn itch
3	Lewis et al 2012 Australia	52 adult admitted to Burn Unit	Medixilir oil	aqueous cream	itch reduction; itch recurrence; antipruritic medication use; sleep disturbance	A reduction in itch after cream application was more likely to occur for those participants managed with Medixilir ® Itch recurrence occurred later and used less antipruritic medications in Medixilir ® group
4	Ahuja et al 2011 India	60 adult (12-60 adult (12-70yr); >5% TBSA burn; 80% epithelialized or healed < 1 mths	Gabapentin; combination of Cetirizine & Gabapentin	Cetirizine;	Severity of itch	All options effective reducing post-burn itch Gabapentin is more effective than Certrizine or a combination of the two
5	GuroI et al 2010 Turkey	63 adolescent (12-18yr); 2 nd -3 rd degree burn	Massage therapy	standard medical care	Itch rating; VAS pain scale; State Trait Anxiety Inventory	Massage reduced post-burn itch according reduction of VAS scores in treatment group Massage is one of the leading non-pharmacological methods of burn itch management
6	Hetterick et al 2004 USA	30 (20) outpatients	TENS	Standard care	Daily usage of TENS; VAS itch level	VAS scores for itch reduced significantly for treatment group but not for control
7	Demling & DeSanti 2003 USA	31 patients burns healed 4-12mths pruritic wound <20% total wound <35%	Doxepin cream	Standard treatment	Daily degree itch; Daily degree pain;	Significant reduction in itch VAS scores in treatment group Mild to moderate somnolence noted in 50% of antihistamine control group. Mild somnolence noted in 10% of doxepin treatment group
8	Demling & DeSanti 2002 USA	41 patients burns healed 4-12mths pruritic wound <20% total wound <35%	Doxepin cream	Standard treatment	Daily degree itch; Daily degree pain;	Significant reduction in itch VAS scores in treatment group Mild to moderate somnolence noted in 80% of antihistamine control group. Mild somnolence noted in 15% of doxepin treatment group
9	Baker et al 2001 USA	32 (17) burn patients (10-60yr); itch rating of 4 or above	Cetirizine/ Cimetidine; Diphenhydramine /placebo;	Revive lotion; Corrective concepts	Itch rating	Cetirizine/cimetidine showed a longer sustained decrease in itch levels compared to Diphenhydramine/ placebo which briefly reduced before increasing again
10	Matheson et al 2001 Australia	35 (34) Adult burn patients (14- 64yr)	Liquid paraffin with 5% colloidal oatmeal shower and bath oil	Liquid paraffin shower and bath oil	Itch score; Anti-histamine usage	Test group reported lower average itch score and lower average number of requested antihistamine, increasing alertness. Better able to participate in activities of daily life, better patient comfort, better skin integrity by reducing scratching, assisting sleep

Included articles

- Categorised into two groups of studies
 - pharmacological
 - non-pharmacological interventions

Pharmacological

- Medications
 - Ahuja & Gupta
 - Ahuja et al
 - Baker et al
- Topical treatments
 - Nedelec et al
 - Lewis et al
 - Demling & DeSanti
 - Matheson, Clayton & Muller

Non-Pharmacological

- Gurol et al
 Massage
- Hetterick et al
 TENS

Discussion

- Main conclusion - no one itch treatment or intervention can remove all itch experienced by the burn patient
- While outcomes were measured relatively similarly there was a wide range of variations in the interventions included in each of the studies
- Most articles reported itch reduction only, not eradication
- Also illustrated is that not all interventions are effective for all patients

Recommendations

- Many studies underpowered due to small sample sizes
- multi-centre trials to expanded available population
- A standardised itch measurement tool for both paediatric and adult patients
- Available data can be used to create protocols to ensure patients have a better management plan

Conclusion

- Burn itch - significant issue for patients, family + clinicians
- Available literature is varied and assesses effectiveness of wide range of treatments often in small population
- Recent studies assess effectiveness of $\alpha 2\delta$ ligands
- Further research is required

Since conducting review

- Ebid AA; Ibrahim AR; Omar MT; El Baky AM. 2015 Long-term effects of pulsed high-intensity laser therapy in the treatment of post-burn pruritus: a double-blind, placebo-controlled, randomized study. *Lasers in Medical Science*. 32(3):693-701, 2017 Apr
- Kaul I, Amin A, Rosenberg M, Rosenberg L, Meyer W, 2017 Use of gabapentin and pregabalin for pruritus and neuropathic pain associated with major burn injury: A retrospective chart review. *Burns* Published online: August 16, 2017
- Joo SY, Cho YS, Cho S, Kym D, Seo CH, 2017 Effects of pain Scrambler therapy for management of burn scar pruritus: A pilot study, *Burns*, Vol. 43, Issue 3, p514–519

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