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A Systematic Review of Wound Care in the Management of New World Cutaneous Leishmaniasis

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Introduction

- **New World Cutaneous Leishmaniasis (NWCL):** one or several chronic, infiltrative lesions on exposed parts of the body
- **Treatment:** pharmacologically to accelerate cure, reduce scarring, and to prevent parasite dissemination (i.e., mucosal leishmaniasis) or relapse
- **Wound Care Initiatives:** exist for other conditions (ex. diabetic foot), evidence-based approach to wound care in cutaneous leishmaniasis has not been established
- Limited data support the role of local wound care for the management of uncomplicated CL

Objective: We aim to synthesize the literature around the role of wound care in the management of NWCL to inform treatment guidelines and evidence-based therapeutic strategies

Methods

- Medline (Ovid), Embase (Ovid), PubMed (NCBI) and LILACS (VHL) were searched from inception to February 2019 without language restriction using combinations of the search terms **“leishmania”** and **“wound care”**
- For the systematic review, we included case reports, case series, cohort studies, observational studies, as well as clinical trials assessing wound care interventions.

Results

- 906 articles were identified with the initial search (Figure 1)
- 256 articles were selected for full text review., of which 241 were excluded mainly due to no mention of wound care, leishmania or non-NWCL origin (Figure 1)
- Study characteristics evaluated: number of participants, wound care strategy/ intervention (types and frequency), outcomes (size of ulcer, scar formation, re-epithelialization), time to outcome, study location, and species identification, was extracted from eligible studies and analyzed

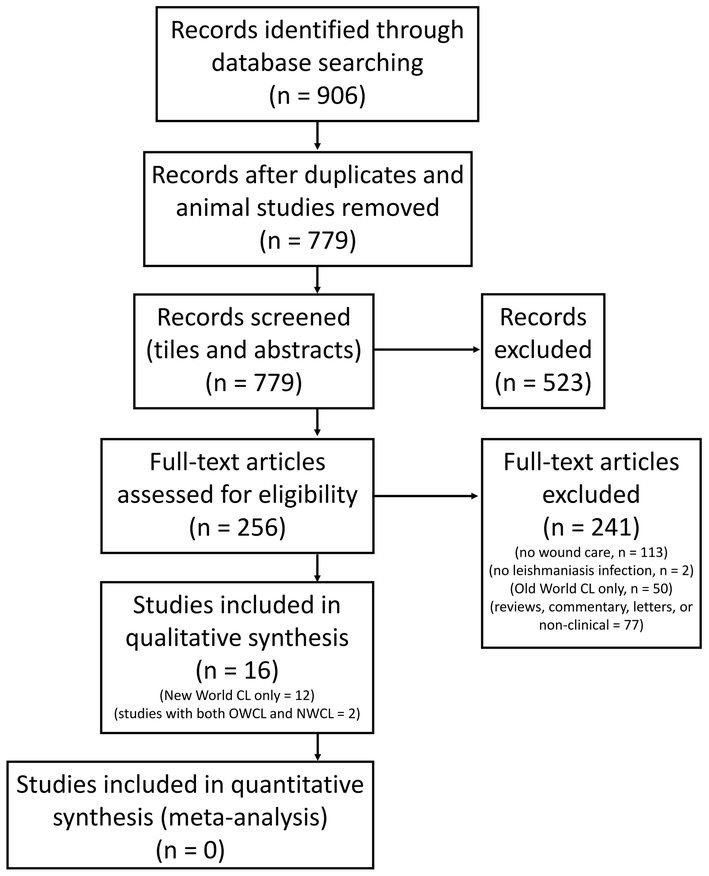

Figure 1: PRISMA 2009 Flow Diagram

Table 1: Summary of 16 papers reviewed in qualitative synthesis.

Theme	Papers Reviewed	Summary of Results
Bacterial Infection	4	Most papers discuss the presence of bacterial secondary infection causing local pain and interfering with ulcer healing. Some papers describe phytochemicals for bacterial inhibition. One study demonstrated that superinfection was more common in the when topical antibacterial was not used.
Cream	4 (2 RCTs)	Most studies identified a cream as the vehicle the active treatment ingredient was delivered in or use as a placebo cream. No comparison was made between cream and no cream.
Dressing	7 (2 RCTs)	The term dressing was used loosely throughout most papers except when explicitly stated as an occlusive dressing. Some dressings were impregnated with active ingredients
Honey	1	Honey potentially delays healing in CL.
Plants	2	A number of plant preparations have been discussed, including 1) heating until dry and crumbly 2) pounded into fine powder mixed with thick ointments 3) boiled in water and used to wash lesions 4) plants heated to high temperatures and placed on top of lesion directly
Washing	3	Washing the ulcer, whether with soap or not, accounted for success in 2/3 studies. 92 % cure was observed between day 42-60 with simple wound care in travelers with CL.

Discussion & Conclusions

- We attempt to map the literature and synthesize the current state of knowledge and topical wound-oriented management practices in NWCL in order to inform optimal adjunctive clinical approaches and guidelines
- No prior literature has primarily outlined wound care strategies in NWCL
- The effect of bacterial colonization on the healing of CL lesions is not ascertainable from the current literature (Table 1)
- Creams have demonstrated rapid healing, especially when applied multiple times/day along with the use of a mechanism to cover the lesion
- How wounds are treated (e.g. debulked, debrided, dressed, covered, occluded, creams and ointments applied, etc.) should be explicitly stated in all leishmaniasis studies.
- It is hard to discern from the current literature what the current treatments are targeting – irradiation of parasites, healing of the lesions, or both. If we could truly separate what is truly killing parasite and what is helping wound healing, we could use combination therapies to improve outcomes.
- Thorough description of wound care should was not described in any of the papers assessed
- Further evaluation of wound care in Old World cutaneous leishmaniasis may benefit management of NWCL

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