INPLASY

Effects of Aloe vera on burns: a systematic review and meta-analysis of randomized controlled trials

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023100018

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 October 2023 and was last updated on 06 October 2023.

INTRODUCTION

Review question / Objective To investigate the treatment effect of topical Aloe vera on burns.

Rationale Burn injuries are a global health concern, leading to pain, infections, psychological distress, and financial burdens. While silver-containing topical antimicrobial agents are widely used in burn wound management, concerns have arisen about their potential to impede wound healing. On the other hand, Aloe vera, a traditional remedy, has shown promise in enhancing burn healing. However, its effectiveness for various burn severities and its analgesic effects remain uncertain. Therefore, we aim to perform a systematic review and meta-analysis to investigate the treatment effect of topical Aloe vera on burns.

Condition being studied Population: burn patients; Intervention: topical Aloe vera; Comparison: other topical antimicrobial agents; Outcomes: wound healing time, pain severity, wound infection, hospital length of stay, cost.

METHODS

Search strategy We plan to search the PubMed, Embase and Cochrane Central Register of Controlled trials (CENTRAL) with keywords of ('burn' OR 'burns' OR 'burned' OR 'scald*' OR 'thermal injur*') AND ('Aloe' or 'Aloe*') on 9 October 2023.

Participant or population Burn patients.

Intervention Topical Aloe vera.

Comparator Other topical antimicrobial agents.

Study designs to be included Randomized controlled trials.

Eligibility criteria Studies will be included if they meet all of the following eligibility criteria: (1) study

design being randomized controlled trials; (2) the participants were burn patients; (3) the study intervention was topical Aloe vera; (4) the comparison treatment was other topical antimicrobial agent. Studies with no treatment or non-antimicrobial agents as the comparator will be excluded.

Information sources We plan to search the PubMed, Embase and Cochrane Central Register of Controlled trials (CENTRAL). We plan to contact the authors of the included trials to obtain data for analysis if it is not available in the original paper.

Main outcome(s) Wound healing time.

Additional outcome(s) Pain severity, wound infection, hospital length of stay, cost.

Data management One author (YKL) will extract the data from the included trials and another author (YNH) will verify these data. We will extract the following data from the included trials: study design, first author, year of publication, study inclusion and exclusion criteria, patients' characteristics (age, gender, baseline total body surface area), intervention and control treatment, wound healing time, pain score, wound infection, hospital length of stay and cost. We plan to contact the authors of the included trials to obtain data for analysis if it is not available in the original paper.

Quality assessment / Risk of bias analysis We will assess the risk of bias of included trials by using version 2 of the Cochrane risk-of-bias tool for randomized trials from The Cochrane Handbook for Systematic Reviews of Intervention. Each RCT will be evaluated according to the following six items:(1) the randomization process; (2) deviations from intended intervention; (3) missing outcome data; (4) measurement of the outcome; (5) selection of the reported result; (6) overall. Any differences will be resolved by discussion between two researchers (YKL and YNH) until an agreement is reached.

Strategy of data synthesis We plan to use the Review Manager Version 5.4 (The Cochrane Collaboration, 2020) and/or Stata to conduct this meta-analysis. The statistical heterogeneity will be assessed by calculating the I2 statistic. Continuous outcomes will be expressed as mean difference with 95% confidence intervals (CIs). Dichotomous outcomes will be expressed as risk ratio with 95% CIs.

Subgroup analysis We plan to perform subgroup analyses for (1) the severity of burn injury (i.e. minor burn versus moderate-to-major burn) and (2) the control group treatment (silver-containing agents versus non-silver-containing antimicrobials).

Sensitivity analysis We will perform the sensitivity analysis to investigate the impact of risk of bias (high risk, some concerns or low risk). In addition, included trials will be excluded one by one to ensure better calculation of the heterogeneity.

Language restriction No language limit.

Country(ies) involved Taiwan.

Keywords Burn, Thermal injury, Aloe vera, Systematic review, Meta-analysis.

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