INPLASY PROTOCOL

To cite: Yan et al. Negative pressure wound therapy for the treatment of local complications after snakebite: A protocol for systematic review and meta-analysis. Inplasy protocol 202230055. doi: 10.37766/inplasy2022.3.0055

Received: 13 March 2022

Published: 13 March 2022

Corresponding author:
Zhangren Yan

20086128@jxutcm.edu.cn

Author Affiliation:
Affiliated Hospital of Jiangxi University of Chinese Medicine.

Support: **Have support.**

Review Stage at time of this submission: **Piloting of the study selection process.**

Conflicts of interest:
None declared.

Negative pressure wound therapy for the treatment of local complications after snakebite: A protocol for systematic review and meta-analysis

Yan, Z[1]; Hu, X[2]; Pan, J[3]; Zhang, S[4]; Wang, H[5].

Review question / Objective: **To assess the efficacy and safety of negative pressure wound therapy (NPWT) for the treatment of local complications after snakebite.**
Information sources: **Electronic databases include PubMed, Embase, Cochrane Library, Web of Science, China Biology Medicine Database (CBM), China National Knowledge Infrastructure (CNKI), and Wanfang Database. We will search the database from its inception until June 2021, regardless of language or publication status. In addition, ongoing studies will be searched in clinical trial registries such as the Chinese Clinical Trial Registry, the Dutch National Trial Registry and clinicalTrials.gov.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 March 2022 and was last updated on 13 March 2022 (registration number INPLASY202230055).

INTRODUCTION

Review question / Objective: **To assess the efficacy and safety of negative pressure wound therapy (NPWT) for the treatment of local complications after snakebite.**

Rationale: **Snakebite is one of the acute diseases that threaten human health seriously. A series of local complications caused by snakebite, such as tissue swelling, ulcer, necrosis and compartment syndrome, are the important causes of disability of patients and cause heavy economic burden. At present, negative pressure wound therapy (NPWT) has been applied to treat the local complications formed after snake bite, and achieved good**

Yan et al. Inplasy protocol 202230055. doi:10.37766/inplasy2022.3.0055 Downloaded from https://inplasy.com/inplasy-2022-3-0055/

effect, but it lacks the support of evidence-based medicine. In this systematic review, we will evaluate the efficacy and safety of NPWT for the treatment of local complications after snakebite.

Condition being studied: We have carried out relevant systematic evaluation research, and skilled in database inspection（PubMed, Embase and Cochrane Library. The Chinese database will search CNKI, CBM and Wanfang database.） and statistical analysis software（Manager 5.3 and STATA）. We have trained and divided the participants.

METHODS

Search strategy: Electronic databases include PubMed, Embase, Cochrane Library, Web of Science, China Biology Medicine Database (CBM), China National Knowledge Infrastructure (CNKI), and Wanfang Database. We will search the database from its inception until June 2021, regardless of language or publication status. In addition, ongoing studies will be searched in clinical trial registries such as the Chinese Clinical Trial Registry, the Dutch National Trial Registry and clinicalTrials.gov. The detailed search strategies are as follows: “negative pressure wound therapy” OR “NPWT“ OR “vacuum sealing drainage” OR “VSD” OR “vacuum assisted closure” OR “VAC” OR ” topical negative pressure “ OR ”TNP” OR “sub-atmospheric pressure “ OR “SAP” OR ”sealed surface 54 wound suction” OR “SSS” OR “negative pressure dressings” AND "snakebite*", "snake*", "Serpentes*","Ophidia*".

Participant or population: This study included all patients diagnosed with local tissue swelling, ulcer, necrosis and compartment syndrome formed after snake bite. There is no restriction on the age, gender, ethnicity or nationality of the patient.

Intervention: The main treatment was NPWT applied to VLUs. We included studies which directly compared the following types of NPWT systems with any other intervention:(1) vacuum assisted closure (VAC),(2) vacuum sealing 53 drainage (VSD),(3) topical negative pressure (TNP),(4) sub-atmospheric pressure (SAP), (5) sealed surface 54 wound suction (SSS), (6) negative pressure dressings, etc.

Comparator: Any intervention other than negative pressure wound therapy.

Study designs to be included: Randomized controlled trials (RCTs) and nonrandomized studies of NPWT for venomous snake bites will be included in this study, regardless of blinding, publication status, languages and region. In addition to randomized controlled trials, retrospective and prospective studies will be included in this study.

Eligibility criteria: Any study with incomplete data.

Information sources: Electronic databases include PubMed, Embase, Cochrane Library, Web of Science, China Biology Medicine Database (CBM), China National Knowledge Infrastructure (CNKI), and Wanfang Database. We will search the database from its inception until June 2021, regardless of language or publication status. In addition, ongoing studies will be searched in clinical trial registries such as the Chinese Clinical Trial Registry, the Dutch National Trial Registry and clinicalTrials.gov.

Main outcome(s): For this review we intended to regard the following as providing outcomes of wound healing: (1) time to complete wound healing, (2) the proportion of wounds healed, (3) disability rate.

Additional outcome(s): Secondary efficacy indicators include wound infection rate, secondary skin graft or suture time, actual length of hospital stay, blood image examination, etc.

Data management: Documents retrieved from the database are exported to

Yan et al. Inplasy protocol 202230055. doi:10.37766/inplasy2022.3.0055 Downloaded from https://inplasy.com/inplasy-2022-3-0055/

NoteExpress (3.3) software for managing and removing duplicate documents.

Quality assessment / Risk of bias analysis: Cochrane Risk of Bias Assessment Tool will be used to appraise the risk of bias. Based on this Assessment tool, we will classify each item into high risk or unclear risk or low risk with respect to the level of risk of bias by two independent reviewers. Any objections will be addressed by a third investigator.The quality of evidence will be assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE).

Strategy of data synthesis: All statistical analyses were performed using Review Manager 5.2.1 software (Cochrane Community, London, United Kingdom). For dichotomous variables, relative risk (RR) was used for statistics. For continuous variables, weighted mean difference (WMD) was selected when the tools and units of measurement indicators are the same, standardized mean difference (SMD) was selected with different tools or units of measurement, and all the above were represented by effect value and 95% confidence interval (CI). Cochrance Q test will be used to qualitatively determine inter-study heterogeneity. If P ≥0.1, there was no inter-study heterogeneity, if P 50%, it was considered to have significant heterogeneity, the source of heterogeneity would be explored through subgroup analysis or sensitivity analysis. If there was no obvious clinical or methodological heterogeneity, it would be considered as statistical heterogeneity, and the random effect model would be used for analysis.

Subgroup analysis: I 2 value was used to quantitatively evaluate the inter-study heterogeneity. If I 2≤50%, the heterogeneity was considered to be good, and the fixed-effect model was adopted. If I 2>50%, it was considered to have significant heterogeneity, the source of heterogeneity would be explored through subgroup analysis.

Sensitivity analysis: I 2 value was used to quantitatively evaluate the inter-study heterogeneity. If I 2≤50%, the heterogeneity was considered to be good, and the fixed-effect model was adopted. If I 2>50%, it was considered to have significant heterogeneity, the source of heterogeneity would be explored through sensitivity analysis.

Language: No restrictions for language.

Country(ies) involved: China.

Keywords: snakebite, compartment syndrome, negative pressure drainage technology, scheme, systematic review. protocol.

Contributions of each author:

Author 1 - Zhangren Yan - Put forward the idea of the protocol scheme and design.
Author 2 - Xiangjun Hu - drafted the manuscript.
Email: 20086128@jxutcm.edu.cn
Author 3 - Junqing Pan - The author provided statistical expertis. and contributed to the development of the selection criteria, and the risk of bias assessment strategy.
Email: pjq181350706@163.com
Author 4 - Sina Zhang - The author contributed to the development of the selection criteria, and the risk of bias assessment strategy.
Email: 1465505486@qq.com
Author 5 - Huan Wang - guidance of the protocol.
Email: 1247784152@qq.com

Yan et al. Inplasy protocol 202230055. doi:10.37766/inplasy2022.3.0055 Downloaded from https://inplasy.com/inplasy-2022-3-0055/