

## INTRODUCTION

- **Silver-impregnated dressings (SIDs)** are often used for the treatment of **chronic wounds** (i.e. wounds present for  $\geq 6$  weeks) in clinical practice.
- Previous reviews that focused on the effect of SIDs on various chronic wounds found **heterogeneous findings**. However, recent trials from 2011 onwards were not included in those reviews. [1,2]

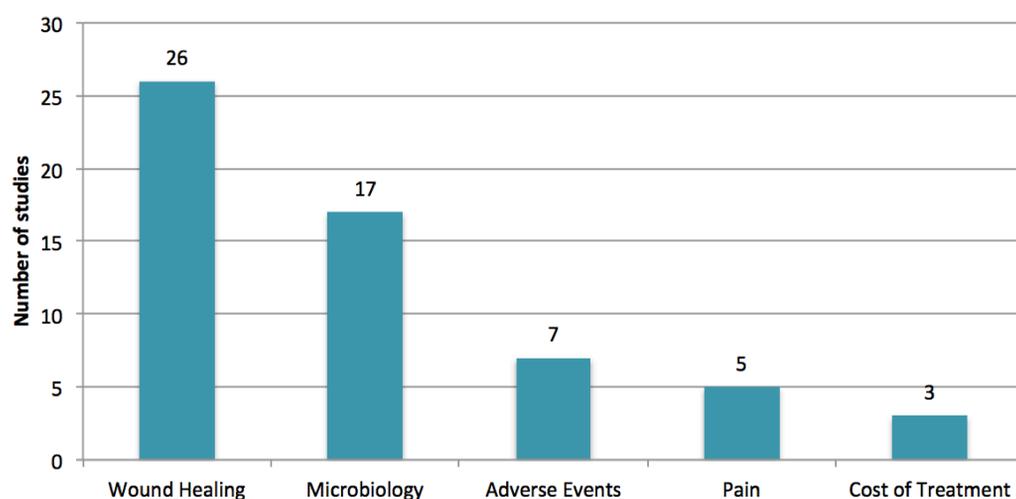
## OBJECTIVE

- Scoping review to determine the evidence regarding the clinical impact of the use of SIDs in patients with chronic wounds.

## METHODS

- Five-stage scoping review framework of Arksey and O'Malley<sup>[3]</sup>.
- **Ten electronic databases** were searched for comparative clinical trials. Examples of **search terms** included "wound healing", "silver compounds", "leg ulcer".
- Clinical outcomes of interest: **wound healing** (wound size, changes in tissue type, healing rate/velocity, wound recurrence), **microbiology** (bacterial load, infectious parameters), **pain, adverse events, and cost of treatment** (Figure 1).

**Clinical Outcomes Evaluated**



**Figure 1.** Total number of studies evaluating clinical outcomes.



## RESULTS

- ✓ **1,076 records were identified, 874 were screened, and 27 studies were included for qualitative synthesis.**
- ✓ All 27 studies were of a **comparative** nature, consisting of **two arm parallel group designs**.
- ✓ Types of experimental designs included **mixed interventions and single interventions**. Studies either evaluated silver vs. silver treatments or silver vs. non-silver treatments.
- ✓ Majority of studies (13/27) included a sample size of  **$\leq 50$  individuals**.
- ✓ **16** different silver treatments were evaluated in the 27 studies, with the **most common silver treatments** being: **hydrofiber, calcium alginate and foam dressings**.
- ✓ **Comparator treatments** evaluated were: Manuka grade medical honey, saline and non-silver dressings.
- ✓ **Heterogeneous findings:** studies might have shown significant improvement for one wound healing outcome, but would not show significant improvement for other wound healing parameters evaluated within the same study.

**Table 1.** Number of studies that reported significant positive findings, non-significant findings, or did not report statistical values.

Outcome Measure	Significant positive findings for SIDs	Significant positive findings for comparator treatment	Non-significant findings	No statistical values reported
Wound Healing	14	0	10	2
Microbiology	3	1	9	4
Adverse events	0	0	0	7
Pain	1	0	2	2
Cost of Treatment	1	1	0	1

## CONCLUSIONS

- The **heterogeneity of findings and study designs** made it challenging to draw significant **conclusions** regarding the clinical effectiveness of SIDs in comparison to standard wound care treatments (Table 1).
- Heterogeneity of findings might be attributed to the **diverse composition and mechanism of action of dressings** that were used across studies.
- Future studies need to address the safety of SIDs as well as cost-benefit analyses. Furthermore, the **development of standardized methodology for measuring outcomes of wound healing** is essential to decrease heterogeneity of interventions and study designs.

## REFERENCES

1. Carter, M.J., Tingley-Kelley, K., Warriner, R.A. *Silver treatments and silver impregnated dressings for the healing of leg wounds and ulcers: a systematic review and meta-analysis*. Journal of the American Academy of Dermatology, 2010. **63**(4): p. 668-79.
2. Lo, S.F. et al., *A systematic review of silver-releasing dressings in the management of infected chronic wounds*. Journal of Clinical Nursing, 2008. **17**(15): p. 1973-85.
3. Arksey, H. and O'Malley, L. *Scoping studies: towards a methodological framework*. International Journal of Social Research Methodology, 2005. **8**(1): p. 19-32.