Summary of a 3M™ Promogran™ Matrix Family Systematic Review and Meta-Analysis

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The number of complex wounds requiring treatment has been increasing.[1] To meet the demand, wound care dressings have evolved to target the wound environment and help remove barriers to healing.[2,3] 3M™ Promogran™ Matrix Family dressings are advanced wound dressings that help maintain a physiologically moist wound environment and promote the development of granulation tissue and epithelization during wound healing.[4-6] In order to provide a more comprehensive assessment of the efficacy of the Promogran Matrix Family, Chowdhry et al utilized a systematic review and meta-analysis of literature to assess Promogran Matrix Family efficacy in the treatment of multiple wound types compared to standard of care dressings.[7]

The systematic literature search was conducted using PubMed, EMBASE and QUOSA for comparative studies published between 1996 and 2020, written in English, with study populations ≥10.[7] The meta-analyses utilized the random-effects model. Differences in wound closure rate, percent wound area reduction, wound area reduction, time to complete healing, days of therapy, number of dressing applications, pain, and concentrations of MMP-2, elastase, plasmin and gelatinase were examined.

SUMMARY OF PUBLISHED RESULTS

A total of 20 comparative studies were included in the meta-analyses.[7] The most common wound types assessed included diabetic foot ulcers and venous leg ulcers; however, several studies were not restricted by wound type and reported on multiple wound types within the study population.[7]

Chowdhry et al reported that wounds treated with Promogran dressings were 3.4 times more likely to close than wounds receiving standard control dressings, and a statistically significant effect in favor of Promogran Matrix Family dressing use was found for percent wound area reduction (p=0.006) and wound area reduction (p=0.017, **Table 1**).[7]

Limited reporting or inconclusive data prevented the assessment of time to complete healing, days of therapy, number of dressing applications, pain, and MMP-2, elastase, plasmin, and gelatinase concentrations.[7]

Adverse events were reported for 7.1% of patients receiving Promogran Matrix Family dressings compared to 17.9% of patients receiving control dressings, although serious adverse events were low for both groups (2.0% Promogran Matrix Family vs 7.9% Control).[7]

Table 1. Summary of meta-analyses

Subgroup analysis	Number of Studies	Odds Ratio (95% CI)	Effect Estimate of Standard Mean Differences (95% CI)	P-value
Proportion of Wounds Closed	10	3.4 (1.15, 10.1)	N/A	0.027
Percent area reduction	4	N/A	1.11 (0.32, 1.90)	0.006
Wound area reduction	2	N/A	0.61, 0.11, 1.11	0.017

CI= confidence interval; N/A= Not applicable. Adapted from Chowdhry et al.[7]

DISCUSSION

Chowdhry et al performed a systematic review and meta-analysis of literature to assess Promogran Matrix Family efficacy in the treatment of multiple wound types compared to standard of care dressings.[7] In these analyses, Promogran Matrix Family dressing use was associated with increased wound closure rates, wound area reduction, and a decrease in adverse events compared to standard dressings.[7]

Limitations exist for this study including limited published large, comparative studies, inconsistencies with literature reporting patient population characteristics, and differences in data reporting between published studies used for the meta-analyses. However, the authors took steps to mitigate the study limitations by following a well-defined systematic literature search protocol, limiting the inclusion of studies with small, non-comparative populations, and using the random effects model to minimize potential population heterogeneity.[7]

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