

Practice Innovation: Use of Polymeric Membrane Dressing to reduce pain, non-viable tissue, and costs of care

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BACKGROUND

There are a variety of dressings that wound care clinicians can choose from to treat hard to heal wounds. In late 2022, the Reading Hospital began to utilize a Polymeric Membrane Dressing (PMD) on wounds with non-viable tissue (NVT) to facilitate the removal of slough and bioburden in the wound base. Anecdotally, the wound care team found the patients had much less pain with the dressing changes. The team performed a retrospective chart review to objectively quantify the improvements they subjectively saw. Additionally, a fiscal analysis was also performed.

CURRENT STATE

Polymeric Membrane Dressing is foam style dressing contain a mild, non-toxic wound cleanser and soothing moisturizer that are released into the wound and the periwound as moisture and exudate is drawn into the dressing. It has been known to reduce inflammation and pain. It can also help facilitate autolytic debridement.

CASES

6 patients were selected to highlight our results:

1. 67 yo M with dehisced surgical incision from fem-pop bypass LLE
2. 67 yo F with chronic VLU LLE
3. 65 yo M with chronic VLU LLE
4. 86 yo M with multiple chronic VLU BLE
5. 66 yo M with mixed arterial/venous ulcers RLE
6. 52 yo F with multiple chronic VLU BLE

Case #	Pain reduction	% reduction in NVT	Admissions year before starting PMD	Admissions year after starting PMD	Treatments before PMD
1	Y	45%	1	0	NPWT
2	Y	70%	9	1	HFB, Silver alginate
3	Y	50%	4	0	Medical grade honey, alginate, NPWT
4	Y	100%	12	4	Foam dressing, silver hydrofiber
5	Y	95%	1	0	Absorptive, foam
6	Y	60%	12	3	Silver alginate and hydrofiber, Superabsorptive, NPWT



Case 5- reduction of NVT over 10 days

Case 3- reduction of NVT over 2 days

References :Kim JJ, Franczyk M, Gottlieb LJ, Song DH. Cost-effective Alternative for Negative-pressure Wound Therapy. *Plast Reconstr Surg Glob Open*. 2017 Feb 6;5(2):e1211. doi: 10.1097/GOX.0000000000001211. PMID: 28280658; PMCID: PMC5340473.; Defning a holistic pain-relieving approach to wound care via a drug free polymeric membrane dressing. S.L.Davies and R.J.White. *Journal of Wound Care* 2011 20:5, 250-256;

Fiscal Analysis

Dressing changes were performed on average 3 times per week. We compared the use of PMD to the previous therapies to determine the monthly cost savings:

1. PMD vs silver alginate- \$62
2. PMD vs silver hydrofiber- \$52.56
3. PMD vs HFB- \$63.10
4. PMD vs NPWT- \$1075.08
5. PMD vs absorptive- \$100.08 (increase)

RESULTS

There was improvement in pain, NVT, and readmissions after initiation of the PMD. The cost savings was also proven while not sacrificing clinical outcomes. It was noted that once patient was discharged, patients were often switched to a different therapy (usually with silver) and had a return of the NVT, which suggests the PMD has ongoing actions for prevention of NVT build up as well.

FOLLOW-UP ACTIONS

Further work needs to be done to improve the use of PMD across the continuity of care. RCT would also help add to the literature to support the use of PMD.

