EVALUATING A DRESSING REGIME TO ‘COMBAT’ POSSIBLE BIOFILM IN COMPLEX HARD TO HEAL CHRONIC WOUNDS

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Background

Patients living with a non healing wound report negative aspects affecting their life. Odour, exudate and pain negatively affect their ability to live a full life and can result in reduced mobility and withdrawal from social interaction. Employment may be threatened or lost resulting in reduced finance and loss of sense of self. Most wounds in the community are chronic and these negative aspects can affect an individual for many months, if not years. Successful wound management depends on understanding all contributing factors; therefore the full medical history, medications prescribed, and the social background to the patient are required.

In non healing wounds, where treatment of underlying factors has been optimised, it may be that local wound factors are significant. Excess exudate, chronic inflammatory state and bioburden are recognised as contributing to chronicity in wounds. Biofilm is gaining recognition as a major contributor to wounds failing to progress even after antimicrobial use.

Method

Case study presentation.

6 people with complex hard to heal wounds, failing to progress and suspected biofilm aged between 42-92 years of age were selected to participate in the evaluation of a dressing regime to combat the local barriers to wounds healing – exudate, infection and biofilm. Wounds included arterial and venous leg ulcers, pressure ulcers and a dehisced abdominal wound.

Treatment was carried out by District Nurses and Practice Nurses following assessment by the Tissue Viability Nurse Specialist, (TVNS) Ongoing supervision was provided by the TVNS.

Results

Within a 4 week period all wound beds improved with sustained removal of slough, increase in granulation and epithelial tissue and likely removal of biofilm. All wounds improved significantly with 2 reaching full healing.

Dressing regime

- Debriding pad to aid removal of slough and possible biofilm.
- Application of enzyme solution soaks to wound bed for 15 minutes.
- Application of AQUACEL® Ag+ Extra™ dressing.
- Appropriate secondary dressing.

<table>
<thead>
<tr>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
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<tbody>
<tr>
<td>Image 1: 3 weeks later</td>
<td>Image 2: 11wks later; wound 2X1cm</td>
<td>Image 3: AQUACEL® Ag+ Extra™ dressing commenced</td>
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<tr>
<td>3 weeks post treatment</td>
<td>11wks post treatment</td>
<td>5 months later</td>
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Conclusion

Whilst biofilms may not be seen with the naked eye, the clinician might suspect they are present where there is a particular ‘sheen’ to a wound bed, unhealthy granulation type tissue, failure of the wound to progress post antimicrobial use, and recurrence of slough. Thorough debridement and cleansing may contribute to removal of part or all of the wound Biofilm, however this will reform within 2 - 4 hours with established colonies in 24 - 48 hours.

AQUACEL® Ag+ Extra™ dressing managed the wound exudate, and enabled the ionic silver antimicrobial to work effectively by utilising ‘+ technology’ to kill and prevent reformation of the protective bacterial biofilm.

On these selected hard to heal wounds, delivery of the wound care regime described above, has moved established chronic wounds along the healing pathway. All of the wounds have demonstrated considerable improvement with 2 reaching full healing. The care has been delivered by generalist nurses without supervision from the TVNS. Improvement and healing in these wounds has a profound effect on the patients general quality of life. There are significant implications regarding cost savings if established chronic wounds are moved towards healing with reduction in associated wound care interventions and nursing visits.

References:
2. Fagervik-Morton H, Price P. Chronic ulcers and everyday living; Patients’ perspective in the UK. Wounds 2009;21(12);318-323

I would like to acknowledge Margaret Armstrong Medical Advisor/Mapa Specialist (ConvaTec Ltd) for her support in developing this poster. © 2015 ConvaTec Inc.