Meta-analysis: Use of a silver-releasing foam dressing* in treatment of venous leg ulcers

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Introduction
Chronic venous leg ulcers are common and their failure to heal is often related to a heavy bio-burden. Ionized silver has both anti-inflammatory and antimicrobial properties. The ulcer healing properties of a silver-releasing foam dressing* has been examined in 4 randomised controlled trials (RCTs).

Aim
To evaluate the effect of a silver-releasing foam dressing* in the management of venous leg ulcers compared with non-active dressings.

Patients and methods
A literature search identified four independent RCTs relevant for the meta-analysis.

685 patients were included in the meta-analysis. All had pure or mixed venous leg ulcers with delayed healing and clinical signs of infection.

The following outcomes were determined:
• Relative reduction of ulcer area over 4 weeks
• Responder rate: defined as the proportion of patients with a relative ulcer area reduction of ≥ 40% at 4 weeks
• Complete healing: defined as the proportion of subjects with a healed ulcer at 4 weeks

Table 1. Data included in the meta-analysis

<table>
<thead>
<tr>
<th>Studies</th>
<th>Ulcer types</th>
<th>Comparator</th>
<th>Ulcer area measurements</th>
<th>Patients included in the meta-analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jørgensen et al. (2005)</td>
<td>Venous or mixed venous leg ulcers</td>
<td>Foam dressing*</td>
<td>Planimetry only</td>
<td>129</td>
</tr>
<tr>
<td>Münter et al. (2006)</td>
<td>Venous or mixed venous leg ulcers</td>
<td>Local best practice</td>
<td>Axis based</td>
<td>315</td>
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<tr>
<td>Humbert et al. (2006)</td>
<td>Venous or mixed venous leg ulcers</td>
<td>Calcium alginate dressing</td>
<td>Planimetry and axis based</td>
<td>60</td>
</tr>
<tr>
<td>Senet et al. (2013)</td>
<td>Venous leg ulcers</td>
<td>Foam dressing*</td>
<td>Planimetry and axis based</td>
<td>181</td>
</tr>
</tbody>
</table>

1All studies were multinational studies except Humbert et al. which was a French study. 2Allevyn®. 3Foams/alginites and hydrocolloids. 4Algosteril®. 5Biatain®

References

* Biatain® Ag, Coloplast A/S

Results

Figure 1. The treatment effects in the 4 RCTs of the silver-releasing foam dressing relative to the comparator, illustrated in a Forest plot. Overall the silver-releasing foam dressing* showed a significant treatment effect (relative ulcer area reduction) (p<0.0001).

Figure 2. Percentage of patients achieving at least 40% ulcer area reduction over a 4 week period was 52% in the silver foam group and 37% in comparator groups. There was a statistically significant difference between groups (p<0.001).

• The fraction of ulcers healed was significantly higher for patients treated with the silver-releasing foam dressing* (12%) compared with the non-active dressings (6%, p<0.002)
• A sensitivity analysis showed a significant treatment effect (p=0.01) even after exclusion of the data from the Münter et al. study, which provided 46% of the patients included in the analysis

Conclusions
The meta-analysis provided statistical significant evidence to support the use of the silver-releasing foam dressing* in treatment of venous leg ulcers, showing faster and improved healing compared with non-active dressings.