Decreasing Surgical Site Infections Postoperatively with Antimicrobial Dressings

Lyndsey Burzynski BSN, RN; Daniel Mauger BSN, RN; Krysta Moore BSN, RN; Danielle Stehle BSN, RN

4 Acute Care

Introduction
Surgical site infections account for up to 20% of all health care associated infections according to the National Institute for Health and Clinical Excellence. They affect more than 5% of surgical patients. Dressings on surgical incisions are thought to reduce postoperative infections.

PICO Question
Population: Postoperative patients
Intervention: Dressings with antimicrobial properties
Comparison: Cotton or gauze dressings currently in use
Outcome: Reduction in surgical site infections

Discussion
• Implementing antimicrobial dressings could decrease the number of surgical site infections in postoperative patients.
• There are many different antimicrobial dressings, comparing the different antimicrobial dressings on different surgeries could be done to look at their effectiveness.
• Education would be needed to implement the new product and how to apply the dressings.

Methods
A literature search was conducted using CINAHL, Medline, and PubMed databases.

Keywords: surgical site infections, dressings, silver dressings, nursing, orthopedics

Inclusion Criteria: Articles within 10 years, English language, adult population.
The initial search yielded 33 articles, 10 met the inclusion criteria and 3 were included for this project.

Results

<table>
<thead>
<tr>
<th>Article</th>
<th>Methods</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee, C. K., Chua, Y. P., &amp; Saw, A. (2012).</td>
<td>38 patients with external fixators including 483 metal/skin interfaces were compared to see the difference in infection rates between use of gauze dressings and gauze impregnated with polyhexamethylene biguanide.</td>
<td>In the control group 4.5% of the sites demonstrated signs of infection compared to 1.0% in the intervention group. Overall sites with PHMB-impregnated gauze had a lower rate of infection.</td>
</tr>
<tr>
<td>Mueller, S. W., &amp; Krebsback, L. E. (2008).</td>
<td>9372 patients in baseline group using sterile plain gauze dressings compared to 10,202 patients in the evaluation group using PHMB dressings post-surgically.</td>
<td>During the baseline period there were 101/9372 (1.08%) patients who developed an SSI. During the evaluation period there were 84/10,202 (0.82%) patients who developed an SSI. There was a 24.07% reduction rate after the PHMB dressings were implemented.</td>
</tr>
<tr>
<td>Siah, C., &amp; Yatim, J. (2011).</td>
<td>79 post surgical patients with no dressing compared to 81 patients with a total occlusive ionic silver dressing. Surgical site swabbed for culture at closure then again 5th-7th post-op day.</td>
<td>First baseline swab revealed no difference in colonization between control and study, while the second swab showed remarkable differences. Overall silver deemed “statistically insignificant.”</td>
</tr>
</tbody>
</table>

Conclusions
Based on the articles discussed dressings with antimicrobial properties are more effective than current cotton or gauze dressings in preventing surgical site infections. There was a significant decrease in infections and colonization of bacteria when antimicrobial dressings were implemented.

References