Complete Wound Closure in Partial Thickness Burns with the Use of Collagen Extracellular Matrix Dressings and Antibacterial Foams

**Objectives**

- **Primary**
  - Investigate the time to absolute wound closure with 100% re-epithelialization in patients with partial thickness burns

- **Secondary**
  - Detect the infection rate of burn wound at each dressing change
  - Determine the rate of pain assessed at each dressing change
  - Identify the percentage of patients with absolute wound closure at visit #3 (12-16 days)
  - Explore the Cost Analysis of standard of care treatment vs. collagen extracellular matrix with antibacterial foam

**Methods**

- Prospective cohort, single site study with a retrospective standard of care comparator analysis run after the completion of the initial study
- 8 to 10 patients from the Lutheran Health Network outpatient wound clinic at St. Joseph Hospital who present with partial thickness burns
- Patients will report to the outpatient wound clinic once weekly (every 6-8 days) for 2 weeks for a total of 2 appointments or until complete wound healing is achieved
- Patients will be properly educated to perform complete wound dressing changes every 3 to 4 days at home

**Inclusion Criteria**

- > 18 years of age
- Presents with partial thickness burns as defined by a burn that affects the top two layers of skin
- Able to provide a written informed consent via self or power of attorney
- Able to report to the outpatient wound clinic for weekly follow-up appointments for two weeks or until complete wound closure
- Able to properly change a dressing at home
- Visit #1 will be the same day of presentation
- Data will be collected via data collection sheets at each visit:
  - Patient demographics
  - Visual wound description
  - Pain assessment using the 1-10 scale
  - Wound measurement
  - Infection assessment
  - After data collection the extracellular matrix collagen dressings and antibacterial foam will be applied with a generic gauze cover dressing to hold it all in place
  - Patients will be asked to report via telephone or clinic visit any adverse events including but not limited to signs of serious itching, irritation, redness or swelling associated with the dressing

**Results**

<table>
<thead>
<tr>
<th>BASELINE CHARACTERISTICS</th>
<th>Treatment Group n = 10</th>
<th>Control Group n = 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex - Male %</td>
<td>60%</td>
<td>80%</td>
</tr>
<tr>
<td>Age (average in years)</td>
<td>38.8</td>
<td>44.2</td>
</tr>
<tr>
<td>Ethnicity of patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Black or African American</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Duration of burn since injury (average in hours)</td>
<td>30% 0-12</td>
<td>70% &gt; 48</td>
</tr>
<tr>
<td>Average BMI</td>
<td>30.3</td>
<td>28</td>
</tr>
<tr>
<td>Average BSA % of Burn</td>
<td>2</td>
<td>2.3</td>
</tr>
<tr>
<td>Tobacco Use %</td>
<td>10%</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Evaluation**

Use of the collagen extracellular matrix exhibited complete closure at visit three matching the wound closure rate of the silver therapy used in the control group. Despite the wound closure rate differences in visit #1 and #2, due to the small sample size there was no statistical difference. Visit 1 (p=0.177) Visit 2 (p=1), and Visit 3 (p=0.319) visit 2 (p=0.193). This again was due to low sample size. Both treatment groups were similar with the exception of the treatment group which noted 30% of the patients presented within 12 hours of the burn injury.

**Conclusion**

The results of our study suggest that the use of a collagen extracellular matrix dressing may provide an alternative to the use of silver dressings in patients with burns of 5% or less. A larger prospective, randomized is needed.

**References**

3. Assessed June 26, 2022

**Disclosure Panel**

Authors of this presentation have the following to disclose: nothing to disclose

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