ABSORBABLE SYNTHETIC MEMBRANE

Positioning in the Treatment of Wounds

Properties

- Composition: Highly water absorbent, gelatinized polylactic acid
- Stability: 5 years, pH 7.4, Bioabsorbable, bioresorbable
- Degradation: 4 weeks (hydrolytically)
- Plasticity: >80% elongation at break
- Permeability to water vapor: >40 - 70 ml/m² (hour)
- pH: 5.5 (initial) => 4.0

OBJECTIVES

- Understand different treatment options for second degree burns
- Compare outcomes after different treatments for second degree burns
- Discuss outcome measures for second degree burns
- Evaluate cost of different treatment options for second degree burns

OUTCOME PARAMETERS

- Demographics
- Pain (average)
- Size of burn
- Failure (required removal/grafting)
- Infection
- Hypertrophic scarring
- Time to healing

STUDY DESIGN

- Retrospective chart review
- 2nd degree wounds (2A and 2B)
- Patient received wound débridement under sedation/anesthesia and absorbable synthetic lactic acid based membrane was placed (= standard care)
- Study period: 9/1/2013 - 9/30/2014
- IRB approval was obtained

PROCEDURE

- Dermabrasion (in OR) or rough débridement (under sedation) of wound
- Rinse with sterile saline
- DermaNet®, N-terface®, Dermanet®, Gauze
- Cover with Bridal Veil (Dermanet®, N-terface®...)
- DermaNet®, N-terface®, Bridal Veil (Dermanet®, N-terface®...)
- Change outer dressing every 1-4 days down to bridal veil
- Remove when healed

RESULTS

Demographics

- 85 patients, 238 applications, for burns
- Average age 20 years (9 weeks to 73 years)
- Average burn size 9.5 %TBSA (1-33)
- Placed in OR/BC 79/6

Comparison to Other Skin Substitutes

Results Retrospective/prospective Comparison Collagen Membrane with Fetal Cells vs. Ointment Treatment for Second Degree Burns (partially previously not published)

Comparison Lactic Acid Membrane, Collagen Synthetic Membrane with Fetal Cells and Calcium Alginate + Ag on Donor Sites

Outcome

- Normal Dressing
- Discoloration, NOT Pseudomonas Infection
- Fewer Hypertrophic Scars (10.5% vs. 23%)
- Healing in 15 days

Cost Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sheet of collagen membrane with fetal cells</td>
<td>approx. 300$</td>
</tr>
<tr>
<td>1 sheet of lactic acid membrane</td>
<td>approx. 300$</td>
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<tr>
<td>1 sheet calcium alginate + AG 8x12&quot;</td>
<td>approx. 100$</td>
</tr>
<tr>
<td>1 tube of collagenase ointment 90 gm</td>
<td>approx. 500$</td>
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<tr>
<td>1 tube of antibiotic ointment 30 gm</td>
<td>approx. 500$</td>
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<tr>
<td>Vaseline gauze 1 sheet 3x18&quot;</td>
<td>approx. 200$</td>
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<tr>
<td>Collagen Membrane With Cells Cost 3% TBSA</td>
<td>approx. 2500$</td>
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<tr>
<td>Sedation Débridement</td>
<td>2500$</td>
</tr>
<tr>
<td>Membrane</td>
<td>500$</td>
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<tr>
<td>Silver and gauze outer dressing</td>
<td>100$</td>
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<tr>
<td>Change outer dressing every 3 days x5</td>
<td>300$</td>
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<tr>
<td>Nursing time average 5 hours</td>
<td>400$</td>
</tr>
<tr>
<td>Healing in 15 days</td>
<td>4100$</td>
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</tbody>
</table>

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