A Systematic Review of the Application of the Medicinal Properties of Honey to Burn Wounds

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Abstract

This review thoroughly examines honey’s medicinal benefits for treating burn wounds. Honey has been used in medical studies published between 2014 and 2024. It highlights honey’s antimicrobial, anti-inflammatory, and wound-healing properties, promoting faster healing, lower infection rates, and improved pain relief compared to traditional treatments. Despite challenges like standardization and regulation, the evidence supports honey as a promising natural treatment option for burns, advocating for its integration into standard wound care protocols.

Methods

Keywords such as “wound”, “honey”, “burn wounds”, and “honey dressings” were used in popular databases such as PubMed as search terms. A systematic review of the literature was conducted to identify relevant studies published between 2014 and 2024. The search strategy was designed to capture both observational and clinical studies. The relevant articles were analyzed, and the evidence was synthesized to understand the evidence for honey’s efficacy in treating burn wounds. The systematic approach included a comprehensive search of electronic databases, critical appraisal of the evidence, and synthesis of the findings to provide an up-to-date overview of the evidence for honey’s use in burn wound treatment.

Results

In the UTSA library database, 24 out of 68 articles were found to be relevant to burn wounds and honey treatments. Among these 24, only 6 were studies conducted on animals. In PubMed’s database, 25 out of 46 related to burn wounds and the therapeutic use of honey. These results were animal studies, where honey was applied on wounds from various animal models, including rabbits, rats, and dogs, and the outcomes measured included wound healing, pain relief, and infection control. By synthesizing the findings, the aim is to provide insights into the therapeutic potential of honey in burn wound management. This review contributes to the body of evidence supporting the use of honey as a natural and effective treatment option for burn wounds. Ultimately, these findings may inform clinical practice guidelines and facilitate the integration of honey-based therapies into standard wound care protocols.

Conclusions

- Medical Grade Honey in Burn Wound Care:
  - Renowned for its anti-inflammatory properties.
  - Reduces pain and inflammation, facilitating accelerated healing.

- Retaining Hypothermic Properties:
  - Honey’s unique characteristics ensure burn wounds heal better than untreated wounds due to lower acidity concentration.

- Application of Burn Wound Effective Efficiency:
  - Demonstrates reduced healing time and improved outcomes.

- Treatment Specificity on Honey and other dressings:
  - Demonstrates effectiveness in treating various burn wound types.

- Pre-existing Conditions and Honey Application:
  - Demonstrates successful treatment outcomes for patients with pre-existing conditions.

- Overall Challenge:
  - Demonstrates significant challenges in optimizing honey’s application.

References

Affiliation: UTSA, San Antonio, TX, USA

Figure 1: Comparison of Minor Acute Wounds with and without Honey Dressings

Results - con’t

Table 1: Table Consisting of Articles found from Two Databases using Relevant Keywords Ranking from 2014-Current.

<table>
<thead>
<tr>
<th>Database</th>
<th>PubMed</th>
<th>UTSA Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Relevant Articles</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Number of Relevant Articles including Animal Studies</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total Number of Articles from Search</td>
<td>48</td>
<td>68</td>
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Figure 2: Comparison of Two Burn Wounds
One treated with Honey and the other being treated with Silver sulphadiazine.

Acknowledgements

We would like to extend our sincere appreciation to the CURES Program for their generous support and funding, which made this research possible. Additionally, we are deeply grateful to Dr. Ferhat Ozturk for his invaluable guidance, expertise, and encouragement throughout this project.

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