A Randomized Controlled Trial on the Effectiveness of Baking Soda- Acetic Acid Solution as an Adjunct to Benzoyl Peroxide in Treating Acne Vulgaris Among Filipino Teenagers and Adults Ages 14-35 years old
Principal Investigators

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Introduction

• Acne vulgaris is common among young adults.
• Benzoyl peroxide is the current mainstay of treatment.
• Baking soda and acetic acid are common household agents that can be used in creating a solution for skin conditions, including acne.
Objectives

• This study determined the effectiveness of a baking soda as adjunct to benzoyl peroxide.

• Treating subjects with facial acne having at least 10 non-inflammatory lesions (comedones), at least 5 inflammatory lesions (papules/pustules), or total lesion count of at least 15, using Evaluators Global Severity Scale (EGSS).
<table>
<thead>
<tr>
<th>SCORE</th>
<th>GRADE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Clear</td>
<td>Normal, clear skin with no evidence of acne vulgaris</td>
</tr>
<tr>
<td>1</td>
<td>Almost clear</td>
<td>Rare non-inflammatory lesions present, with rare non-inflamed papules (papules must be resolving and may be hyperpigmented, though not pink-red)</td>
</tr>
<tr>
<td>2</td>
<td>Mild</td>
<td>Some non-inflammatory lesions are present, with few inflammatory lesions (papules/pustules only; no nodulocystic lesions)</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Non-inflammatory lesions predominate, with multiple inflammatory lesions evident: Several to many comedones and papules/pustules, and there may or may not be one small nodulocystic lesion</td>
</tr>
<tr>
<td>4</td>
<td>Severe</td>
<td>Inflammatory lesions are more apparent, many comedones and papules/pustules, there may or may not be a few nodulocystic lesions</td>
</tr>
<tr>
<td>5</td>
<td>Very Severe</td>
<td>Highly inflammatory lesions predominate, variable number of comedones, many papules/pustules and many nodulocystic lesions</td>
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</tbody>
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Methodology

• Double blind, randomized, controlled trial
• Subjects were randomized to a treatment group (benzoyl peroxide gel-baking soda) or a control group (benzoyl peroxide gel-distilled water)
• Improvement was noted by a 1-grade reduction from baseline score at the end of each week for four weeks
Results

• There was a more significant improvement (p=0.008) in the control group than the treatment group.

• By EGSS score, a mean reduction of 1.39 for the baking-soda solution and 2.09 for the distilled water group was found.

• The relative risk (0.820) showed the control group was more beneficial than the treatment group, although not statistically significant (p=0.109).
Discussion

• Data from this study does not conform to results of previous research, which showed significant improvement of acne severity.

• A possible explanation for this discrepancy is the addition of aspirin in previous studies, which was not used in this trial.

• Improvement in EGSS scores in both groups was believed to be secondary to benzoyl peroxide.
Conclusion

• Baking soda-acetic acid solution was not effective as an adjunct to benzoyl peroxide in treating acne subjects

• Baking soda-acetic acid solution is generally safe for facial use
Recommendations

• Longer Observation Period - 8, 12, 16 weeks
• Longer period of time on face
• Focus on mild acne cases only
• Varying concentration ratio of baking soda-acetic acid