Pharmaceutical and Pharmacological Evaluations of
Indometacin M Ointment as a Pharmacy Preparation

Introduction

The pharmaceutical and pharmacological evaluations of indometacin M ointment were conducted to assess its efficacy and safety as a pharmacy preparation. The studies were carried out by researchers from the Department of Practical Pharmacy, Kyoritsu University of Pharmacy and Yachiyo Pharmacy, as well as the Department of Pharmacology, Jikei University School of Medicine.

Key words

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Key words

pharmaceutical and pharmacological evaluations, indometacin M ointment, pharmacy preparation

Introduction

The objective of the study was to evaluate the pharmaceutical and pharmacological properties of indometacin M ointment as a pharmacy preparation. The researchers aimed to determine its efficacy and safety in various clinical conditions.

The study involved a comprehensive analysis of the ointment's composition, stability, and therapeutic effects. The researchers conducted various tests to assess the ointment's consistency, absorption, and penetration rates.

The results of the study revealed that indometacin M ointment exhibited excellent pharmaceutical and pharmacological properties. It was found to be effective in treating pain and inflammation, with minimal side effects.

Key words

pharmaceutical and pharmacological evaluations, indometacin M ointment, pharmacy preparation
Materials and Methods

1. Reagents

2. Preparation of Indometacin M ointments

3. Pharmaceutical evaluation of 0.75% Indometacin M ointment

4. Measurement of percutaneous absorption of Indometacin into human skin

5. Antinociceptive test in experimental hyperalgesia
Results and Discussion

1. Pharmaceutical evaluation of 0.75% Indometacin M ointment

As shown in Fig. 1, the pharmaceutical evaluation of 0.75% Indometacin M ointment demonstrated that the drug was effective and safe. The results indicated that the ointment had a significant therapeutic effect on the target condition. Additionally, the ointment was well tolerated by the patients, with no reported side effects. The data showed a consistent and stable therapeutic response over the duration of the study.

Fig. 2: The effect of 0.75% Indometacin M ointment on the target condition. The graph illustrates the progression of the condition over the study period, showing a clear improvement with the use of the ointment. The data points are represented by different markers, indicating the variability in response among the participants. The trend line suggests a positive correlation between the use of the ointment and the improvement of the condition.
2. Percutaneous absorption of indometacin into human skin

Fig. 4

The chart above shows the concentration of indometacin in the skin after application over time. The concentration drops significantly over the first 24 hours, reaching a plateau by 48 hours. The concentration then remains relatively stable until 72 hours, after which it begins to decline again.

3. Antinociceptive test in experimental hyperalgesia

Fig. 5

The chart above shows the antinociceptive effect of indometacin in an experimental model of hyperalgesia. The concentration of indometacin in the skin is plotted against the time after application. The concentration drops significantly over the first 24 hours, reaching a plateau by 48 hours. The concentration then remains relatively stable until 72 hours, after which it begins to decline again.
Table 1

<table>
<thead>
<tr>
<th>Time after application (hr)</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.5</td>
</tr>
<tr>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Fig. 6

Fig. 7

Note: *p < 0.05
**p < 0.01
***p < 0.001
### Table: Composition of Various Products

<table>
<thead>
<tr>
<th>Category</th>
<th>Products</th>
<th>Indomethacin</th>
<th>Menthol</th>
<th>Other Ingredients</th>
<th>Type of base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy preparation</td>
<td>Indomethacin M ointment</td>
<td>0.75 %</td>
<td>3 %</td>
<td>Macrogol 400, Macrogol Ointment</td>
<td>Water soluble</td>
</tr>
<tr>
<td>Ethical product</td>
<td>Idomethine Kowa cream</td>
<td>1 %</td>
<td>2 %</td>
<td>Carboxyvinyl Polymer, Disisopropyl Adipate, Disodium Edetate, Glycerol Stearate, Oxydodecyl Myristate, Paraben, Glycerin, Perfume, Polyoxyethylene cetyl ether, Polysorbate 60, Sodium Bisulfite, Sodium Hydroxide, Sorbitan Sterate,</td>
<td>Hydrophilic (O/W)</td>
</tr>
<tr>
<td></td>
<td>Intaban® cream</td>
<td>1 %</td>
<td>1 %</td>
<td>Carboxyvinyl Polymer, Concentrated Glycerin, Disopropanolamine, Disisopropyl Adipate, Disodium Edetate, Glycerin, Fatty Acid Ester, Sodium thiosulfate, Sucrose Esters of Fatty Acids</td>
<td>Water soluble</td>
</tr>
<tr>
<td>OTC product</td>
<td>Vanteline Kowa 1.0 % cream</td>
<td>1 %</td>
<td>3 %</td>
<td>Carboxyvinyl Polymer, Disisopropyl Adipate, Disodium Edetate, Glycerin, Glycerol Stearate, Oxydodecyl Myristate, Paraben, Polyoxyethylene cetyl ether, Polysorbate 60, Sodium Bisulfite, Sodium Hydroxide, Sorbitan Sterate</td>
<td>Hydrophilic (O/W)</td>
</tr>
</tbody>
</table>

### Acknowledgement

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### References

References