

A Research on Burn Relief Antibacterial Ointment

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Received: 04 Jan 2023; **Accepted:** 24 Feb 2023; **Published:** 01 Mar 2023

Citation: Singh S, Chouhan AS, Suthar D, et al. A Research on Burn Relief Antibacterial Ointment. Japanese J Med Res. 2023; 1(1): 1-2.

ABSTRACT

Burning is a mishap that can occur anytime with anyone. Burns that are superficial or partial-thickness often recover within two weeks, excluding complications such as infections or chronic conditions. Topical creams are frequently used to treat superficial and partial thickness burn in order to maintain a moist wound environment, reduce pain, and stop bacterial infection. Severe burns require attention of special kind and may also end up requiring hospitalization. In this research work, we focused on preparing burn relief ointment with the help of neosporin, amoxicillin, lignocaine and petroleum jelly. Neosporin and amoxicillin act as antibacterial agents, lignocaine acts as local anesthetic agent and petroleum jelly has been used as ointment base.

Keywords

Ointment, Burn relief, Treatment, Semi-solid, Antimicrobial.

Introduction

Ointments are a semi-solid preparation used for external skin or mucous membrane treatment. Typically, they include one or more medications that have been dissolved, suspended, or emulsified in an ointment base. They might have an appropriate antimicrobial preservative in them. The majority of ointments are made of a base that primarily serves as a vehicle or carrier for the medications [1,2]. Selection of the ointment base is a crucial component of formulation because the composition of the base also affects how well it works [3]. In contrast to fatty alcohols, conventional ointment bases are oleaginous in nature, consisting of hydrocarbons like petrolatum, beeswax, and vegetable oils that do not permit the addition of any water. Topically applied ointments can serve a variety of functions, including protective, antimicrobial, emollient, antipruritic, keratolytic, and astringent. If the end product is to fulfill any of the aforementioned functions, the base of the ointment is crucial. The ointment base composition regulates the transfer of medications from the base to the human tissues as well as the depth of penetration [4,5].

White wax, carnauba wax, beeswax, and candelilla wax are just a few examples of the natural waxes utilised in cosmetic and pharmaceutical applications [6]. Petroleum jelly has been used as a base in the formula.



Figure 1: Ointment Preparation in Mortar-Pestle.

Instruments

S.no.	Name	Company
1	Mortar-Pestle	Local manufacturing

Chemical

S.no.	Name	Company
1	Neosporin powder	Glaxo smith kline (gsk) Pharmaceutical Ltd
2	Amoxicillin capsule	Alkem laboratories Ltd
3	Lignocaine hydrochloride gel	Intas pharmaceutical Ltd
4	Petroleum jelly	HU Ltd

Formula

- Neosporin powder 2gm
- Amoxicillin capsule 1gm
- Lignocaine hydrochloride gel 0.5gm
- Petroleum jelly... 20gm (q.s)

Procedure

1. Weighed 10gm of petroleum jelly.
2. Added 2gm Neosporin powder, triturated the solid medicaments.
3. Then added 2gm amoxicillin powder and 0.5 gm lignocaine hydrochloride gel.
4. Added remaining quantity of petroleum jelly and triturate in mortar-pestle until uniformly mixing.

Uses

S.no.	Ingredient	Uses
1	Neosporin powder	Antibiotic
2	Amoxicillin powder	Antibiotic
3	Lignocaine hydrochloride gel	Local Anaesthetic
4	Petroleum jelly	Base

Evaluation of ointments

- **Organoleptic characteristics:** The organoleptic properties, including physical appearance, color, texture, phase separation, homogeneity, and immediate skin feel of the ointment formulations, that the ointments had a good appealing appearance and smooth texture, and they were all homogenous with no signs of phase separation [7,8]
- **Skin irritation test:** An in-vitro, non-animal test to detect compounds or formulations that can irritate the skin is the skin irritation test. To check for any irritation, a little amount of ointment was placed and evenly massaged into the skin [9,10].
- **Spreadability:** The spreadability apparatus, which consists of a wooden board with scale and two glass slides set on a pulley, was used to calculate spreadability [11].

Result and discussion

- **Organoleptic characteristics:**
 - Physical Appearance - Semi Solid
 - Odour - Pungent
 - Colour - Pale Yellow
- **Skin irritation test:** Non-irritant in nature.
- **Spreadability:** High spreadability rate.

In this research, we found that the prepared formulation of ointments was evaluated for its physicochemical parameters and all the findings obtained were within the prescribed limit. The formulation showed good viscosity, strength, and spreadability.

Conclusion

Ointments are applied topically for a variety of purposes, including protective, antiseptic, emollient, antipruritic, keratolytic, and astringent. The ointment base composition controls the transfer of medications from the base to the body tissues. The ointment has two antibiotic formulas, Neosporin powder combined with amoxicillin powder for synergism effect. Lignocaine hydrochloride.

Acknowledgment

We are thankful to all the sincere and extremely helping friends for their support and help for the completion of work. Last but not the least, we are thankful to all those who cooperated and helped us directly or indirectly to carry out this work.

Ethical Approval

Ethical approval was not required for this letter. All data used is publicly accessible.

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