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A Review On Pharmaceutical Cream

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Abstract: *Creams have long been a preferred option for skin application due to their convenience in use and removal. They serve multiple roles such as moisturizing, cleansing, enhancing appearance, and protecting the skin from infections. Moreover, they are beneficial in treating skin injuries like cuts, burns, and cracks. Although the skin has a natural ability to heal, the process is often slow and susceptible to infections, especially in its early stages. Applying creams can accelerate healing and provide a protective barrier against external contaminants.*

This review centres on the use of pharmaceutical creams for treating skin cracks. It explores the healing process, methods of cream formulation, classification based on purpose and properties, key ingredients, and evaluation techniques. Creams are semi-solid emulsions, either oil-in-water (O/W) or water-in-oil (W/O), with their consistency depending on the oil-water ratio. These may be therapeutic or cosmetic in nature.

Skin repair is a multifaceted process that demands an optimal healing environment. Factors such as infections and chronic illnesses can significantly delay recovery. In severe cases, poor wound care may even lead to complications like amputation. Unlike dry wound dressings that can dehydrate the area and impede healing, moist dressings—particularly topical creams—maintain hydration, support tissue regeneration, and accelerate the recovery process.

This paper examines the pros and cons of using topical creams for wound and crack treatment and proposes improvements in cream formulation to enhance drug delivery. In summary, creams play a vital role in wound management and regenerative therapy, highlighting the need for advanced healing strategies to reduce medical costs and improve patient outcomes.

Keywords: Dosage form, Topical Drug Delivery, Cream,foot Crack Heal Cream

I. INTRODUCTION

Dosage Forms

Pharmaceutical dosage forms, including oral, injectable, topical, and others, are essential in the therapeutic use of medications. These formulations generally consist of the active pharmaceutical ingredient along with excipients and other non-consumable components like packaging or delivery mechanisms. The term “dosage form” may sometimes only refer to the chemical
composition of the drug, excluding the delivery method or container.

Topical formulations are often chosen to avoid the complications associated with oral or injectable drugs—such as gastrointestinal side effects, painful injections, and potential infections.

Topical Drug Delivery

Topical application is a promising method for both local and systemic drug delivery. It is widely accepted for managing dermatological conditions by allowing deeper penetration of active compounds into the skin. Specialized drug carriers are used to enhance localized drug concentration and minimize systemic exposure, ensuring efficient percutaneous absorption.

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Topical systems improve bioavailability, reduce gastrointestinal side effects, and bypass liver metabolism. They are primarily used for targeted therapy with minimal systemic involvement.

Topical drug products are categorized into:

- **Internal topicals**: Applied to mucous membranes (oral, vaginal, rectal) for local effects. Minimal systemic absorption may occur, but typically not enough to cause systemic effects.
- **External topicals**: Applied directly to the skin in the form of creams, sprays, gels, or ointments for localized treatment.

Advantages of Topical Drug Delivery

- Avoids complications related to injections and oral administration (e.g., enzymatic degradation, pH variation).
- Provides localized action with a smaller dose, minimizing systemic exposure.
- Allows for easy termination of therapy if adverse effects occur.
- Avoids gastrointestinal irritation.
- Enhances patient compliance and enables self-medication.
- Suitable for drugs with short half-lives or narrow therapeutic windows.

Limitations

- Topical therapy may not be suitable for all drugs. Ideal candidates should be low in molecular weight, lipophilic, and effective at low doses. Additionally, penetration enhancers used to improve absorption might cause skin irritation.

Rational Use of Topical Formulations

Topical products serve various functions:

- **Protection**: Sunscreens shield skin from UV damage; antibacterial agents prevent infections.
- **Therapy**: Direct application of drugs like anaesthetics and anti-inflammatory agents targets affected tissues.
- **Cosmetic Use**: Products like exfoliants and depilatories are used for personal care.
- **Systemic Therapy**: Transdermal patches deliver medications systemically for conditions like hypertension and motion sickness.

Classification of Creams

- Cleansing and Cold Creams
- Foundation and Vanishing Creams
- Night and Massage Creams
- Hand and Body Creams
- All-purpose Creams

Properties of Creams

- Easy to apply and remove
- Spread evenly on the skin
- Should melt at body temperature
- Help cleanse skin pores
- Leave a protective, emollient layer
- Prevent skin dryness unlike soap
- Aid in removing makeup and impurities
- Soften and hydrate the skin

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- Remove oil, dirt, and dead skin cells

Key Characteristics of Creams

- Should liquefy at body temperature
- Must penetrate the epidermis
- Low viscosity for easy spreading
- Non-toxic and non-irritating
- Should not cause inflammation

Uses of Creams

- **Cleansing creams**: Remove dead skin, dirt, and oil
- **Vanishing creams**: Useful in humid environments to reduce facial sweat
- **Protective barrier**: Prevents moisture loss
- **Soothing effect**: Reduces irritation and supports healing
- **Medical use**: Treats conditions like eczema, dermatitis, rashes, itching, insect bites, and allergies
- Can be used on mucosal surfaces (e.g., rectal or vaginal applications)

Understanding the Foot

The foot consists of five metatarsal bones connecting the toes to the rest of the foot. Pain in this region, often due to pressure, is known as **metatarsalgia**.

Each foot supports over **100,000 pounds of pressure** per mile walked.

The **forefoot** includes the metatarsals and phalanges (toes).

The **midfoot** comprises pyramid-shaped bones (three cuneiforms, navicular, cuboid) forming the foot arch.

The **hindfoot** contains the heel bone, which supports the body's weight during movement.

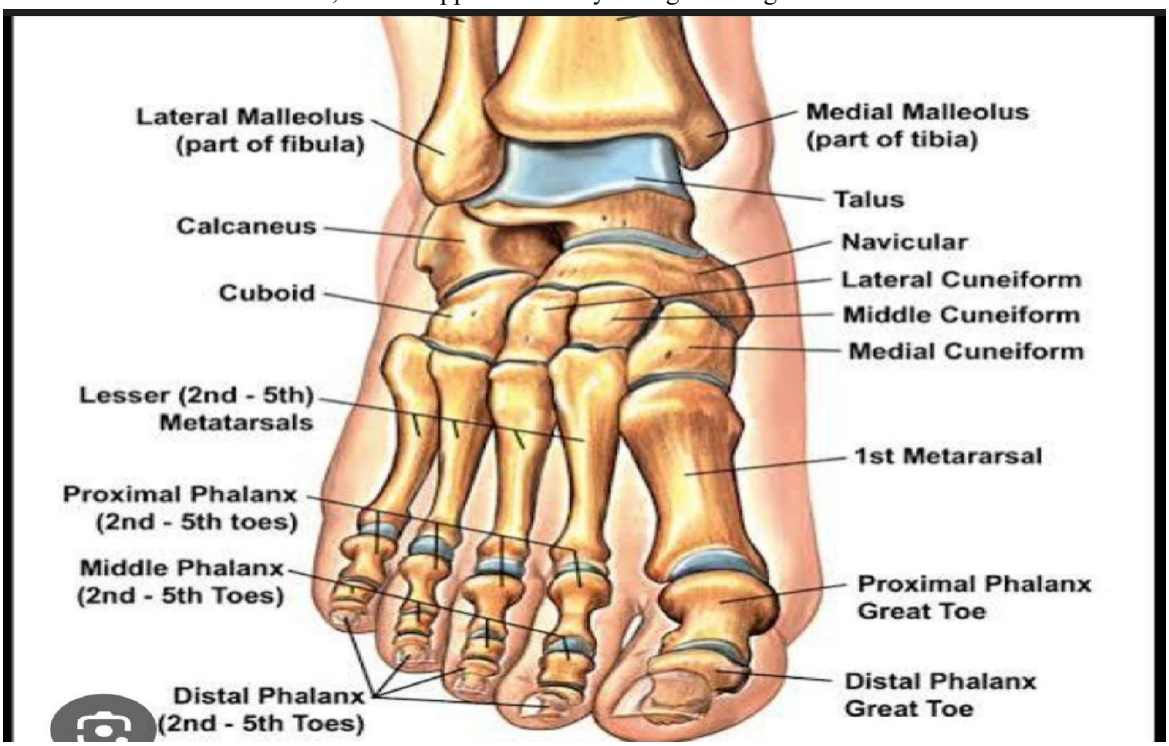

Fig no.1

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Introduction

What Is the Foot?

The **foot** is a complex anatomical structure that supports the body and enables movement.

It is made up of three main parts:

Forefoot: Contains five **metatarsal bones** and five **toes (phalanges)**. These bones link the toes to the rest of the foot and help with balance and propulsion.

Midfoot: Forms the **arch** of the foot using a group of bones arranged in a pyramid-like shape. This includes the **three cuneiform bones**, the **navicular**, and the **cuboid**.

Hindfoot: Composed of the **heel** and **ankle**, it provides stability and absorbs shock during movement.

During walking or running, the foot is subjected to significant stress. In fact, each mile walked places over **100,000 pounds of pressure** on the foot.

Metatarsalgia

This term refers to **pain in the ball of the foot**, typically caused by excessive pressure on one or more metatarsal bones. It can result from overuse, improper footwear, or biomechanical abnormalities.

Cracking

Skin-Related Cracking (Heels and Feet)

Cracked or dry skin on the feet, particularly around the heels, can occur due to various internal and external factors. Identifying the root cause can help in managing and preventing recurring symptoms.

Common Contributing Factors:

External/environmental:

Wearing open footwear that exposes the feet

Lack of proper moisturizing

Standing for prolonged periods

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Medical and health-related:
Skin conditions such as eczema or juvenile plantar dermatosis
Systemic diseases like hypothyroidism or Sjögren's syndrome
Obesity, which increases pressure on the feet
Fungal infections, such as athlete's foot
Foot structure issues, including flat feet or heel spurs
Cracking in a Chemical Context
In chemistry, **cracking** refers to a process where large hydrocarbon molecules are broken down into smaller, more useful compounds. This often occurs through **thermal decomposition**, commonly used in fuel production.
How Do Crack Heel Creams Work?
Crack heel creams typically work by:
Hydrating dry skin: Softening and moisturizing the rough, calloused skin around the heel.
Exfoliating: Removing dead skin cells to smoothen the area.
Healing: Some creams contain antibacterial or anti-inflammatory ingredients to accelerate healing and prevent infection.

Key Ingredients in Effective Crack Heel Creams
Urea (10-40%)
Hydrates and exfoliates dead skin.
Common in dermatologist-recommended products.
Salicylic Acid
Helps in exfoliating thickened skin.
Lactic Acid
A gentle exfoliant and moisturizer.
Lanolin & Beeswax
Lock in moisture and provide a protective barrier.
Coconut Oil, Shea Butter, or Almond Oil
Nourish and soften skin naturally.
Tea Tree Oil or Eucalyptus Oil
Provide antifungal and antibacterial benefits.

Top Crack Heel Creams (2024 Review)
1. AmLactin Foot Repair Cream Therapy
Key Ingredient: Lactic Acid (15%)
Pros: Non-greasy, fragrance-free, dermatologist-recommended.
Cons: May sting on severely cracked skin.
2. Flexitol Heel Balm
Key Ingredient: Urea (25%)
Pros: Fast-acting, approved by podiatrists, effective for diabetic feet.
Cons: Thick consistency, medicinal smell.
3. Kerasal Intensive Foot Repair
Key Ingredient: Salicylic Acid + Urea
Pros: Visible results in 1-2 days, softens very rough skin.
Cons: Can feel oily.
4. Himalaya Wellness FootCare Cream (Herbal)
Key Ingredients: Honey, turmeric, sal tree extract
Pros: Natural, soothing, affordable.
Cons: Less potent for severe cracks.

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User Experience & Results

Most users report noticeable improvement in heel condition within **3–7 days** of consistent use. Regular application before bed, followed by wearing socks, enhances effectiveness. Severe cases might require **twice-daily application** for quicker relief.

Common user feedback includes:

Reduced pain and cracking.
Skin becomes smoother and softer.
Less callus build-up with regular use.

Pros & Cons Summary

Pros	Cons
Rapid relief from dry, cracked skin	Some creams are greasy or thick
Widely available and affordable	May cause mild irritation initially
Suitable for diabetics (some types)	Needs consistent use for lasting results

Tips for Better Results

Soak your feet in warm water before applying cream to soften the skin.
Use a pumice stone to gently remove dead skin.
Wear socks overnight after applying cream.
Avoid open-back shoes if possible, especially in dry weather.

II. CONCLUSION

Crack heel creams can be highly effective in healing dry, cracked feet when used consistently and correctly. Products containing **urea, lactic acid, or natural oils** offer the best results. For severe or infected cracks, a doctor or podiatrist should be consulted.

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