Despite being 5,000 years old, the ayurvedic method of traditional Indian medicine is

still in use today. Indian traditional medicine mentions 8,000 remedies that are natural.

In India, people have been using a variety of herbs to treat diseases since ancient times.

Whole plants or plant parts, such as stems, roots, flowers, and fruits, contain active

compounds that have specific therapeutic value and can be used to treat, prevent, or cure

a variety of illnesses. A lot of individuals think that herbal medicines are safe because



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#### **Review Article**

# Herbal Anti -Inflammatory Cream

ABSTRACT

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#### **INTRODUCTION**

Immunity is the immune system's response to pathogens, damaged cells, toxins, or radiation, and it works to eliminate these stimuli and start the healing process [2]. As a result, inflammation is a crucial health defense mechanism [3]. In general, the acute inflammatory response's cellular and molecular relationships and processes successfully prevent further harm or infection.[4]High mobility group box 1 (HMGB1), superoxide dismutase (SOD), glutathione peroxidase (GPx), NADPH oxidase (NOX), inducible nitric oxide synthase (iNOS), and cyclooxygenase (COX)-2 are among the enzymes whose abnormal activation is a major factor in the development of inflammation-related diseases like cancer and cardiovascular disease [5]. Nonsteroidal anti-inflammatory medications

they are natural remedies.

(NSAIDs) that block cyclooxygenase (COX) are the first line of treatment for inflammatory pain.

#### Causes of Inflammation

Type of Agent	Examples	Remarks
Biological	<ul> <li>Viruses, bacteria, fungal organisms etc</li> <li>Necrotic tissue eg. dead heart muscle in myocardial infarction</li> </ul>	Different types of micro- organisms incite different types of inflammatory responses eg. bacteria – acute inflammation; viruses chronic inflammation etc.
Chemical	Poisons, toxins	2
Physical	Trauma causing tissue injury; Foreign body (eg. splinter)	
Immune reactions	- Autoimmune diseases – immune response to self- antigens - Immune response to foreign tissue like allergens	Seen more in chronic inflammation

### Type of inflammation: -1. Acute inflammation: -

Your immune system responds to an unforeseen illness or damage in this way. Inflammatory cells

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migrate to an injury or infection, like a cut on your finger, to start the healing process. Infection of many bodily parts can cause unexpected and usually temporary inflammation. For example, throat inflammation can be caused by bacterial diseases like strep throat and viral infections like the flu.

Additional bacterial and viral infections (enteritis) may cause inflammation in your small intestine. The duration of acute inflammation may vary from a few hours to many days, depending on your health.

### 2. Chronic inflammation: -

In this scenario, your body releases inflammatory cells when there is no threat. For example, in rheumatoid arthritis, inflammatory cells and chemicals attack the joint tissues. Your joints may sustain significant damage as a result of the sporadic inflammation this causes. Processes that should be defending your body are impaired by chronic inflammation. Chronic inflammation can last for months or even years. There may be periods of improvement and periods of worsening.

### Symptoms of acute inflammation?

When a certain area of your body is injured, you could observe:

- Skin that is flushed or discolored.
- Only the location of the damage should experience minimal pain or soreness.
- Swelling, such as inflammation in the knee.
- Skin that is more uncomfortable to touch.
- The inability to move that bodily part as you usually would, such as a decreased range of motion.

### Symptoms of chronic inflammation?

Signs of chronic inflammation could be more difficult to identify than those of acute inflammation.

You could be experiencing the following:

- Pain in your abdomen.
- Pain in the chest.



- Weariness and/or sleeplessness.
- A fever.
- Stiffness or soreness in the joints.

Mouth sores.

- A rash on the skin.
- Mood problems such as anxiety, depression, and others.
- GI problems, such as acid reflux, constipation, and diarrhea.
- Gaining or losing weight.
- A lot of infections.

### The process that dermal inflammation works:



Plants with anti-inflammatory properties: Oxidative stress causes reactive oxygen species to accumulate and remain in the skin, which can lead to an inflammatory process that can become chronic and show up clinically as erythema, edema, and pain.

1. Ginger:

Ginger's anti-inflammatory effects are achieved by preventing neutrophil and macrophage activation and negatively affecting leukocyte and monocyte movement. This was demonstrated by the restoration of the total antioxidant capacity and the dose-dependent decrease in pro-inflammatory cytokines and chemokines.



#### 2. Curcuma: -



1, 7-bis (4-hydroxy-3-methoxyphenyl)-1, 6heptadiene-3, 5-dione is the chemical name for curcumin, which has biological qualities like antiinflammatory, anti-oxidant, and anti-tumor effects.1. It is believed that curcumin's antiinflammatory properties underlie all of its biological action and are essential for the treatment of diseases.

**3.Coconut oil** -Because of its antioxidant concentration, coconut oil may have antiinflammatory and brain-protective effects. The MCT lauric acid in coconut oil may also help decrease cholesterol, according to 2017 research on animals.



4. Clove -Clove oil's analgesic and antiinflammatory qualities are well established. About 80% of its bioactive ingredient is eugenol, and its derivatives, including acetoeugenol, humulene, and  $\alpha$ -caryophyllene, have potent antibacterial, antioxidant, anti-inflammatory, and antipyretic properties.



#### 5. Lemon: -

Lemons are a good source of vitamin C, a powerful antioxidant, and flavonoids, which are plant components having anti-inflammatory and antioxidant qualities. Antioxidants are compounds that help shield the body's cells from damage.





6. Castor oil - Castor oil's anti-inflammatory, antifungal, and pain-relieving antioxidant, properties may be among its health benefits. It can be used to relieve constipation, clean dentures, moisturize skin, and induce childbirth. Although more research is required, the limited evidence points to castor oil as a potential remedy for joint discomfort. Olive oil. With so many proven health benefits, olive oils are one of the most studied fats. They include a lot of monounsaturated fats, antioxidants, and anti-inflammatory substances. Extra virgin olive oil, the least refined type, is physically squeezed rather than heated or treated with chemicals.



#### Methodology:

In order to aid spread the oil in the water, an emulsifier is usually included when combining the oil and water stages to create creams. The following steps are part of the typical creammaking process.

1. Get the oil phase ready.

Add components in the form of flakes or powder to mineral or silicone oil. It might be necessary to melt some ingredients.

2. Make the aqueous phase hydrated

Emulsifiers, thickeners, and stabilizers should be mixed with water in a different container. It could be necessary to heat in order to accelerate hydration.

3. Establish the emulsion

To create the emulsion, vigorously combine the two phases.

4. Spread the active component.

Frequently, the active component makes up a very small portion of the

Parameter of evolution:

The prepared creams were evaluated by a number of

in accordance with normal parameters practices

### 1) pH

The standard buffer solution was used to calibrate the pH meter. After weighing and dissolving around 0.5 g of the cream in 50 ml of distilled water, the pH of the mixture was determined.

## 2) The viscosity

Using spindle number 7, the Brookfield viscometer was used to measure the formulation's viscosity at 100 rpm.

#### 3) The dye test

The cream was combined with the fiery crimson dye. A coverslip was used to cover a drop of cream that had been put on a microscopic slide. This was inspected under a microscope. The o/w type formulation is indicated by the dispersed globules' colorless appearance on the crimson ground.

#### 4) Uniformity

Visual appearance and touch were used to test the uniformity of formulations. the 5) Look

The cream's color, roughness, and pearlescence were evaluated before it was graded. After feeling After applying a predetermined quantity of cream,



the degree of emolliency, slipperiness, and residue were assessed.

### 6) Smear kind

The kind of film or smear that developed on the skin following cream application was examined.

### 7) Removal eases

The applied area was washed with tap water to test how easy it was to remove the cream. 8) The irritability test

Time was recorded as the cream was administered to the designated area. At regular intervals up to 24 hours, irritability, erythema, and edema were reported assessed and if present.

# 9) Ouicker analysis of stability

For the two most stable formulations, MF4 and MF5, accelerated stability testing was carried out at room temperature and monitored for seven days. When the formulations were stored for 20 days at 40°C +/- 1°C, similar results were obtained. The formulations were observed on the 0th, 5th, 10th, 15th, and 20th day for the parameters while being maintained at room temperature and at a higher temperature.

Considering the criteria used to evaluate different creams, MF4 was selected and further subjected to in vitro diffusion studies.

# **CONCLUSION**

From this review concluded that the herbal cream shows effective anti-inflammatory activity.

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