

A Review on Antiacne Cream using Clove Oil

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Abstract: Acne is a common skin problem associated with the microbial infection and need antimicrobial agent for the treatment. Herbal product containing essential oil as anti-microbial agent are undoubtedly a growing trend. Clove oil is reported to have antimicrobial activity against acne causing microorganisms such as propionibacterium acnes, staphylococcus epidermidis, staphylococcus aureus, and candida albicans. Hence the present study was undertaken with aim to formulate develop Anti-acne cream by using clove oil. the essential oil was extracted by steam distillation method and cream formulation Bureau of Indian standard guidelines BIS guidelines and for antimicrobial activity against the microorganism responsible for acne by agar well diffusion technique. Also, all the anti-acne cream formulation where subject stability studies and subjective evaluation of the panel of human volunteers. The result showed that the anti-acne cream(F3) containing clove oil is effective against microorganisms responsible for acne. Clove oil is a effective anti-acne agent hence can prove to be incorporating in anti-acne preparation.

Keywords: Clove oil, Anti-acne cream, Formulation, Evaluation, Anti-microbial, Acne

I. INTRODUCTION

Acne is a chronic inflammatory pilosebaceous unit. It is characterized by the information of comedones, papule, pustules, inflammatory nodules, filed cysts and in extreme cases canalizing and deep scaring. Acne develops on the those areas where sebaceous gland are most numerous: the face, scalp, neck, chest back upper arms, shoulders. The bacteria propionibacterium acnes, staphylococcus epidermis's, staphylococcus epidermis, staphylococcus aurous, the fungus candida Albans are almost the commonly present the pustular contain of the acne. Acne is a common skin problem associated with microbial infection. For it is treatment antimicrobial agent are required. Various antimicrobial agent used in cosmetic preparation form natural and synthetic sources. Normally synthetic materials are used because of low cost and strong antimicrobial synthetic material may give adverse effect to human and environment also faith of consumer on herbal product is growing



Fig. of clove Plant.

Essential oils have to find out effective natural antimicrobial agent. Essential oils have a wide application in folk medicine, food flavouring and preservation as well as in fragrance industrial the antimicrobial properties of essential oil

have been known for many centuries. In recent years, a large number of essential oil and their constituent have been investigate for their antimicrobial properties against some bacteria some bacteria and fungi. It reported that essential oil provided of gentle and inexpensive way of treating acne, clearing infection and healing acne scarring India has a rich heritage of traditional remedies. In India spices are used extensively for adding aroma and taste to food. They are used widely in Ayurvedic preparation, flavour and perfume industries. Clove consists of dried flower buds of (*Eugenia caryophyllus*) (thumb) (*syzygium aromaticum*) (Merrill and Perry) belonging to family (Myrtaceae).

Classification of Acne

A. Non –inflammatory Acne

Closed comedones

Open comedones

B. Inflammatory of Acne

Papules -Small pink bulb appear on the skin.

Pustules - lesion with central visible core contain pus.

Nodules-fill with deeper pus and heal with scar comedones, papulopustular, and nodulocystic.Pustules and cysts are considered inflammatory acne Mild acne. This patient has a few erythematous papules and occasional pustules mixed with comedones Acne vulgaris is characterized by non-inflammatory, open or closed comedones and by inflammatory papules, pustules, and nodules. Acne vulgaris typically affects the areas of skin with the densest population of sebaceous follicles; these areas include the face, the upper part of the chest, and the back.

Causes of acne

- There are three major factor that causes acne.
- Overactive sebaceous glands(oil), abnormal shedding of dead skin, and a proliferation of acne causing bacteria.
- None of this factors have to do with skin care or lack there of , and they all must be present for acne to occur.
- Excess oil (sebum) production hair follicles clogged by oil and dead skin cell; bacteria inflammation acne typically appears on the face.
- Hyperactive sebaceous glands (overactive lipid secretion).
- Hyperkeratosis (accelerated keratinization) at hair infundibulum.
- Activity of bacteria (*Propionibacterium acnes*) promoting comedogenesis.
- Cyclic hormonal levels in women. Occupational hazards such as chronic exposure to chemicals. and air contaminants, high humidity.
- Other stimuli and events associated with acne include seasonal effects, excessive sexual activity, emotional or psychological stress, mechanical manipulation of the skin surface, and certain drugs such corticosteroids.

Symptoms of acne

Whiteheads (closed plugged pores)

Blackheads (open plugged pores)

Small red, tender bumps (papules)

Pimples(pustules) Red spots or swelling on the skin, generally known as pimples; the swelling may become inflamed and filled with pus. They typically appear on the face, chest, shoulders neck or upper portion of the back. Dark spots with open pores at the centre(blackheads).

Acne is a chronic skin condition that affects most people at some point during their life. It causes spots to develop on the skin, usually on the face, back and chest. can be mild, moderate or severe. Acne is thought to be caused by changes in hormones that are triggered during puberty. Acne can cause great distress and an adverse effect on a person's quality of life and self-esteem .Therefore, healthcare professionals recognise that the condition requires effective and sometimes aggressive treatment.

HOW COMMON IS ACNE

- Acne is the most common type of skin condition. It is most widespread among older children, teenagers and young adults.
- Around 80% of 11 to 30-year-olds are affected by acne. Most acne cases in girls occur between the ages of 14 to 17 and in boys the condition is most common in 16 to 19- year-olds. Most people will experience repeated episodes, or flare-ups, of acne for several years before finding that their symptoms gradually start to improve as they get older. The symptoms of acne usually disappear when a person is in their twenties.
- However, in some cases, acne can continue into adult life, with approximately 5% of women and 1% of men over 25 continuing to experience symptoms.

Cream

- Cream is dairy product composed of the higher fat layer from the skin in un-homogenized milk the fat, that less dense, eventually cream skimmed formed.
- Using a face cream is important because it keeps the moisture and elasticity in the skin, which can help reduce wrinkles, age, and other fine lines. Face cream also act as protective barrier.
- Face creams are cosmetic creams or lotion, consisting of any various substances in the form of a thick liquid, applied to the face to improve the complexion and for softening and moisturizing the skin. A cream is a preparation usually for application to the skin. Creams are semi- solid emulsions of oil and water.

Types of cream

- Oil in water (o/w) cream
- Water in oil(w/o) cream

Advantages

- It works as protective layer for the skin.
- It acts as barrier to the skin
- It gives moisture and elasticity in the skin.
- It penetrates deeper into the skin, to give required pharmaceutical effect.

Disadvantages

- Stability is not as good as ointment
- They are less hydrophobic than other semisolid preparation, so risk of contamination is.

DRUG AND EXCIPIENT PROFILE

1] clove

- Clove are the aromatic flowers bud of the tree in the native Maluku islands in Indonesia and
- are commonly used as a species only, flavouring or fragrances in customer products
- Scientific name – Syzygium aromaticum
- Family- Myrtaceae
- Order- Myrtles
- Kingdom- plantae
- Biological Source – Eugenia caryophyllus

• Ingredients

A] stearic acid

Stearic acid is an emulsifier , emollient and lubricant that can soften skin and help to keep product from separating
stearic acid used in hundreds of personal care product moisturizer sun cream and makeup cream.

Formula – C18H63O2

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Molar mass- 28.489 /mole

Melting point – 69.°C

Appearances- white solid

• Odour- pungent oily

Density- 0.408 g/cm

B] Acetyl alcohol

This medication is used as moisturiser to treat for prevent dry rough itchy skin and minor skin.

Infection.

Formula – C16H3HO.

Molar mass – 242.44 gm/mole.

M.P -49.3C.

Appearances- White crystal.

Odour – very faint wax.

Density – 0.811 g/cm.

• C] Bees wax

Is used in cosmetic industry within acne for dry skin for line and wrinkles emulsified solution and increases water holding capacities of cream

Formula- C15H31CO2C30H61

Molar mass- 61-65°Cc

M.P- 64.5°C

Appearances – white colour

Density- 0.95

D] glycerine monostearate

It is use as thickening of emulsifying and preservative agent and emulsifying agent for oil waxes and solvent a protective coating for hygroscopic powders a solidifiers a d controls release agent in pharmaceuticals and resin lubricant

Formula- C21H42O4

Molar mass-358.57 g/mole

M.P - 55°C

appearances – white waxy powder

E] Mineral oil

They are used in chemical industry. it is highly purified ingredient used in body lotion, cold cream and many other personal care product, due to it ability to help to reduce water loss from skin It moisturise.

Formula – C16H10N2Na20Z52 Molar weight- 452.363

M.P 24°C.

Appearance- colourless liquid.

Physical state- oil.

Density – 0.85.

F] Propyl paraben

It is used in pharmaceutical industry. Propyl paraben function as preservative in cosmetic an personal care product antimicrobial. Further by limiting the growth of bacteria and fungi preservatives like isobutyl propene help keeps us from infection and other diseases

Formula – C10H12O3 Molar weight- 180.2 gm/mole

M.P- 95-98°C

appearances- odourless crystals. White powder density-106 gm/cm

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II. CONCLUSION

Numerous medicinal herbs in India have been used for skin treatment from ancient times. Acne is a common skin condition that has numerous causes, including microbial infections. Although acne is not a life-threatening condition, it can have a detrimental effect on one's perception of oneself. The market for cosmetics derived from plants is steadily growing. Alternative approaches may be possible given the high risk of recurrence and the length of time required for chemical-based treatments. Clove oil is not widely used as an anti-acne agent in cosmetic formulations, despite its stated antibacterial and antifungal qualities. This could be due to a lack of scientific proof and insufficient documentation about its effectiveness in cosmetic formulations.

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