

Review On of Herbal Antiacne Gel

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Abstract— Acne vulgaris is a long-term inflammatory disorder of the pilosebaceous unit that leads to the formation of inflammatory lesions, such as seborrhea, comedones, etc. Propionibacterium acnes and Taphylococcus epidermidis have been recognised as pus-forming bacteria triggering inflammation in acne. Staphylococcus aureus is known to cause inflammation in acne. Natural remedies are more acceptable in the belief that they suffer from fewer side effects than synthetic ones. The present study is aimed at formulating and evaluating topical gels containing neem, Allium cepa, and Eucalyptus globulus extracts as potential antiacne drugs. Six formulations containing the herbal extracts were prepared using 1% carbopol 940 as a gelling agent. The phytochemical composition of the plant extracts was determined. The extracts and gels' minimum inhibitory concentration (MIC) was assessed using the microbroth dilution method.

Index Terms—Herbal Drug, Anti-acne, Gel.

1. Introduction

The word acne comes from the Greek word "akme," which meaning peak or apex. It is an inherited or learned fondness of the units of pilosebaceous. Acne vulgaris is the proper name for this condition. The most prevalent disorder among young people, typically between the ages of 18 and 25, is acne. The skin condition known as acne vulgaris, which affects the pilosebaceous gland, is characterised by the development of comedones, seborrhea, inflammatory lesions, and bacteria in the follicular canal that include Propionibacterium acnes, Staphylococcus epidermidis, and Staphylococcus aureus. It also causes excessive production of sebum. Nearly all races are affected by this nearly universal disease, which affects 95% of girls and 83% of boys. It has been stated that P. acnes is an obligatory anaerobic microbe. Its ability to trigger complements and convert sebum triglycerides into fatty acids, which chemotactically attract neutrophils, are linked to the onset of inflammatory acne.

However, the anaerobic organism S. epidermidis typically causes superficial infections inside the sebaceous unit. As a result of P. acnes' chemicals breaking down skin cells' cellular structure, Staphylococcus aureus proliferates and causes acne lesions.

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These elements offer a possible therapeutic target. The benefits of medicinal herbs include broad acceptance and patient tolerance. Examples of traditional remedies for acne include Citrus aurantifolia and Azadirachta indica.

Antimicrobial, anti-inflammatory, and antioxidant properties of aloe vera, allium cepa, and eucalyptus globulus help treat skin infections effectively. Their general strength is also believed to be enhanced by the nutrients and minerals they contain. By gender, acne vulgaris was the second most frequent skin condition, accounting for 5.3% of all reported diagnoses. Because many Ghanaians purchase over-the-counter acne treatments, especially topical skincare drugs, and get their acne treated at their neighbourhood pharmacy, only a limited range of acne treatments are available. Thus, additional information about acne is required. The strategy for treating acne is An abundance of seborrhea (scaly red skin), comedones skin disease that usually affects young people. When you have acne you get a lot of spots on your face. Preparation of Extracts Garlic scales were cut into small pieces, dried and grinded to make fine powder. Specific quantities of herbal drug were weighed and added to the conical flask containing five times volume of 1:1 water-ethanol mixture. The contents were allowed to boil on water bath under reflux condition for about 30 min. The contents were filtered out and solid residues were again boiled with five times volume of 1:1 water-ethanol mixture in the water bath under reflux condition for about 15 min. The contents were filtered out and filtrates

2. ACNE Vulgaris

The most prevalent type of acne is called acne vulgaris. Acne vulgaris typically starts during puberty but frequently persists into the twenties, thirties, and beyond, according to a study published in The Journal of the American Academy of Dermatology. Although it can appear anywhere on the body, the face, neck, chest, and back are the most typical places for it.

Types of lesions that are common in acne vulgaris are.

- Papules: Papules are sensitive, inflammatory, red lumps on the skin without a head. Squeezing a papule won't make it go away any faster and could even make it scar.
- Whiteheads: A fully clogged pore is the cause of a whitehead. A white head appears on the skin's surface as a result of the trapped oil, germs, and dead skin cells. Over-the-counter acne treatments are frequently used to treat them.
- Blackheads: Blackheads frequently appear when a

pore is partially clogged. A blackhead forms when the trapped germs, oil, and dead skin gradually seep to the skin's surface. The reaction between oxygen and melanin in the skin gives the skin its black colour. Generally speaking, blackheads clear up more slowly than whiteheads.

- Pustules: The most prevalent kind of acne lesion is a pustule. Usually, they take the shape of an enflamed red circle with a white or yellow centre. Acne sufferers can pop them at home, but they should make sure the material they are treating the skin with is sanitary and avoid touching them with bare hands. After the pustule has been ruptured, acne treatments could work better.
- Nodules: Nodules are commonly a result of severe acne. Hard nodules under the skin caused by acne can be quite large and last for several months. Anyone with nodular acne should see a dermatologist for appropriate therapy as scarring is a common side effect of this type of acne.

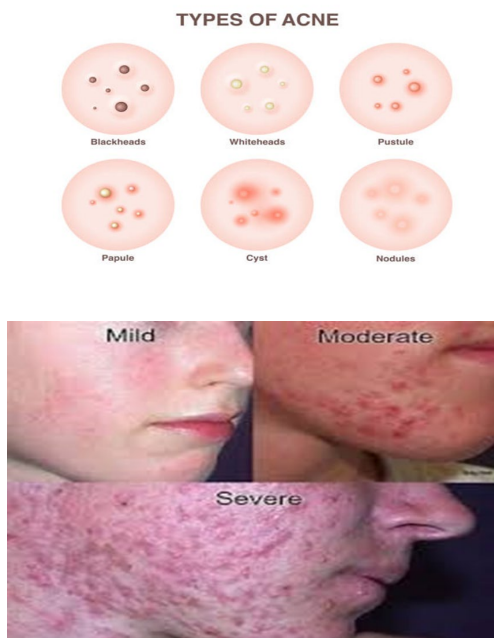


Fig.1. acne vulgaris

A. GEL

A gel is a solid substance that resembles jelly and can range in consistency from soft and fragile to strong and rigid. Gels are generally made of a web of linked molecules, frequently polymers, that catch and retain a lot of liquid. Gels' special qualities, such as their ability to maintain their shape while being pliable and somewhat flowing like liquids, are due to their structure. Gels are employed in many different fields, such as materials research, food goods, cosmetics, and pharmaceuticals.



Fig.2. Gel

1) Simple Gel

Cross-links can be created by physical or chemical processes. As a result, gel systems are classified as chemical or physical, respectively. Physical gels are caused by comparatively weaker and reversible secondary intermolecular forces such hydrogen bonding, electrostatic contacts, dipole-dipole interactions, Vander Waals forces, and hydrophobic interactions, whereas chemical gels are linked to permanent covalent bonding. Gels are made of two phases: the continuous phase contains large organic particles that are dissolved and randomly coiled in the flexible chains, while the inorganic particles are simply scattered throughout the phase.

Advantages

- First pass metabolism is avoided.
- Practical and simple to use.
- Enhancing the pharmacological and physiological reaction.
- Boost adherence from patients.
- Make self-medication appropriate

Disadvantages

- The medication and/or excipients may cause skin irritation or contact dermatitis.
- Some medications have poor skin permeability.
- c.The potential for allergic responses.

B. Herbs Used in Gel

Neem, Tulsi, turmeric, Carbopol 934, PEG 1500, Methylparaben, Glycerin, Triethanolamine is used in
DETAIL PROFILE OF HERBS USED

1) NEEM

Synonyms: Nira, Nimb, Vespa, Limba, Nimba
Biological source: Neem consists of the fresh or dried leaves and seed oil of *Azadirachta indica* belonging to family Meliaceae.
Azadirachta Indica

Chemical Constituents:

Nimbin, 6-desacetylnimbinene, Nimbiene, Nimbandiol, nimbolide, Quercetin, Ascorbic acid,



Fig.3. Neem

GEOGRAPHICAL SOURCE:

It is found in India, Pakistan, Sri Lanka, Malaya, Indonesia, Japan, Tropical region of

Australia and Africa. In India, it is found in Uttar Pradesh, Maharashtra, Tamil Nadu,

Rajasthan, and M.P.

Uses:

- Poultice, applied to boils.
- In worm, jaundice
- Ulceration of cowpox
- Antiviral and anti-fungal

Pharmacological uses:

Anti-ulcer, antifertility, antifungal, antiviral, anti-pyretic.

2) TULSI

Synonym: Gauri, bahumanjari, pavani, gramya, surasa, vishnuvallabha, pavani,

apetakshashi, bhutaghi, devdandubhi, sulabha

Chemical Constituents:

Eugenol (1-hydroxy-2-methoxy-4-allylbenzene), the active constituent present in *Ocimum sanctum* L., has been found to be largely responsible for the therapeutic potentials of Tulsi.

Uses:

- For dental health
- Antioxidant
- Heart health
- Treating skin disease
- Relieving from fever and cold



Fig.4. Tulsi

3) TURMERIC

- Synonym: curcuma.
- *Curcuma aromatica*.
- *Curcuma domestica*.
- *curcumae longa*.

- *curcumae longae rhizoma*.
- curcumin.
- curcumine.
- Curcuminoid

Chemical constituents:

Two active components of turmeric are the volatile oil and curcuminoid and both are present in oleoresin extracted from the turmeric root. The essential oils are composed mainly of sesquiterpenes, many of which are specific for the *Curcuma* genus.



Fig.5. Turmeric

Uses:

- Inflammation.
- Degenerative eye conditions.
- Metabolic syndrome.
- Arthritis.
- Hyperlipidemia (cholesterol in the blood)
- Anxiety.
- Muscle soreness after exercise.
- Kidney health.

C. Antiacne Activity:

Contains active substances with a track record of addressing different aspects of acne development. These could include antimicrobial substances that help lower the number of bacteria on the face that cause acne, including tea tree oil or benzoyl peroxide. Anti-inflammatory drugs such as aloe vera or niacinamide can also aid in lessening the redness and swelling brought on by acne lesions, hastening their healing process. Additionally, some gels have sebum-controlling components like zinc or retinoids that aid in regulating excessive oil production, a typical cause of acne development. Salicylic acid and other exfoliating chemicals can also help clear clogged pores and stop new acne lesions from forming. These components combine to produce a synergistic effect that offers a thorough.

D. Natural Remedies

Natural remedies are boon to any disease. In the world market, herbal formulations are in great demand. Herbal medicines are believed to be safer than allopathic medicines. All the formulations were optimized based on evaluation parameters such as Physical appearance, Washability, pH,

Spreadability, Extrudability, Drug Content, Antiacne activity. Acne vulgaris is a reasonably prevalent condition that affects virtually.

3. Conclusion

Common people typically have acne vulgaris at least once in their lifetime. It is a general skin condition. Although this condition primarily affects teenagers, many adults between the ages of 20 and 40 also contract it. Thanks to extensive study, individuals now feel more confident using herbal remedies than synthetic ones because they are safer. Avoiding synthetic medications is mostly recommended due to their various side effects, which include contact allergies, local irritation, scaling, photosensitivity, itching, pruritus, redness, skin peeling, and xerosis of the skin. In the current investigation, herbal anti-acne gels were formulated and assessed. The primary goal of this study was to create a safe, table-top anti-acne gel without the use of any artificial additives. Herbal anti-acne gel, that is. Artificial additives can have a number of negative consequences on the skin; the best remedies for this issue are anti-acne gels made from neem and Turmeric, extract. Various assessments were conducted to verify the effectiveness of the gel. Based on the test results, we can say that the gel formulation of garlic extracts and neem is safe for usage.

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