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A Review on Multipurpose Herbal Cream Preparation, Evaluation and Its Clinical Applications

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A B S T R A C T

Herbal creams, gels, and ointments are commonly used for significant semisolid herbal formulations in topical dose therapy. Accordingly, semisolid bases are combined with extracts and isolated phyto compounds from medicinal plants to formulate a topical preparation that can treat skin problems. However, the anti-inflammatory properties of medicinal plants stand as an essential stage in the process of creating herbal medicines. Formulations for herbal medicines that use locally available medicinal plants are now widespread in nations like China and India. These reports directed us to further formulate and develop a herbal multipurpose cream serving its antimicrobial and anti-inflammatory activity. Herbal medication products have been utilized for centuries as a primary form of healthcare in many cultures worldwide. Derived from plants and plant-derived materials, these products offer a rich source of bioactive compounds with potential therapeutic benefits. The use of herbal medicines spans diverse traditional systems, such as traditional Chinese medicine, ayurveda, and indigenous healing practices. This traditional knowledge has been passed down through generations, offering valuable insights into the healing properties of various plant species. Herbal medication products have demonstrated therapeutic potential across various health conditions, including digestive disorders, respiratory ailments, chronic pain, and immune system support. Their bioactive constituents, such as alkaloids, flavonoids, terpenes, and polyphenols, can interact with biological systems, offering potential therapeutic benefits. However, the growing demand for herbal medication products also raises concerns about quality control, safety, and efficacy. the consistent quality and standardization of herbal products is crucial to guarantee their safety, efficacy, and reproducibility. The use of robust quality control methods ensures the authenticity and therapeutic value of herbal remedies, fostering consumer trust and promoting the responsible integration of herbal medicine into modern healthcare practices. Continued research and collaboration between traditional knowledge and modern science will undoubtedly enhance the quality and acceptance of herbal medication products, further benefiting public health and wellbeing.

Keywords: Herbal medication products, Topical dose therapy, Healthcare, Topical dose therapy.

A R T I C L E I N F O

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Contents

1. Introduction

The concept of beauty and cosmetics dates back to ancient mankind and civilization. Generally herbal cosmetics are also referred to as natural cosmetics. Herbal cosmetics are formulated, using different cosmetic ingredients to form the base in which one or more herbal ingredients are used to

cure various skin ailments. Plants are highly used for development of new drug products for cosmeceuticals and pharmaceutical applications. Herbal Cosmetics, referred as Products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefits only, shall be called as "Herbal Cosmetics". Herbs do not produce instant cures. They offer a way to put the body in proper tune with nature. A huge number of cosmetic and toiletry formulations have been designed and developed based u p o n Indian Herbs recently. Other than traditionally documented applications, some modern trials have also been using the utility of Indian herbs in Personal Care products. The demand of herbal medicines is increasing rapidly due to their skin friendliness and lack of side effects. The best thing of the herbal cosmetics is that it is purely made by the herbs and shrubs and thus is side-effects free. The natural content in the herbs does not have any side effects on the human body; instead provide the body with nutrients and other useful minerals. The term Cosmeceuticals was first used by Raymond Reed founding member of U.S Society of Cosmetics Chemist in 1961[1-3]. He actually used the word to brief the active and science based cosmetics. The above term was further used by Dr Albert Kligman in the year 1984 to refer the substances that have both cosmetic and therapeutic benefits.

Herbal medication products, also known as herbal medicines or phytotherapeutic products, refer to medicinal products derived from plants or plant materials. These products utilize the therapeutic properties of various plant species, including their leaves, flowers, roots, stems, or extracts, to promote health and treat or prevent diseases. Herbal medication products often contain a combination of active compounds, such as alkaloids, flavonoids, terpenes, and phenolic compounds, which contribute to their pharmacological effects. Herbal medication products can be classified based on different criteria. Based on different classification methods, we summarize the classification rules of traditional Chinese herbal medicine.

Traditional Chinese medicine (TCM) and Ayurvedic herbal medication products have both holistic system of healthcare and healing that has been practiced for over 2,000 years in China and other parts of East Asia. TCM uses a wide range of medicinal herbs, minerals, and animal products to restore balance and treat various health conditions. These natural substances have been used for centuries for their therapeutic properties and health benefits. Herbal formulas are often prescribed based on the individual's unique pattern of disharmony. Different herbs have specific chemical compounds that exert various effects on the body.

Certain minerals and mineral-rich substances are used in traditional medicine for their therapeutic effects. For instance, calcium, magnesium, iron, sulphur, and zinc were supplied for bone health and muscle function, the treatment of anemia and to boost hemoglobin levels, skin conditions like acne and eczema, the immune system, and wound healing. Traditional medicine systems, particularly in East Asia, have used animal products for their medicinal properties. Some examples include deer antler velvet which is used to strengthen the body, improve energy, and support joint health, and bear bile used in some traditional Chinese remedies, though the use of bear bile is controversial due to animal cruelty concerns. Cordyceps is a fungus that parasitizes insects and is used for various health benefits, including respiratory support and energy enhancement. It is essential to note that while traditional medicine systems have been using these substances for generations, the safety and efficacy of medicinal herbs, minerals, and animal products are not always supported by modern scientific evidence. Some of these substances may interact with medications or have potential side effects. Therefore, it is crucial to consult with qualified healthcare professionals, such as herbalists or traditional medicine practitioners, who have knowledge and experience in the safe use of these natural remedies. In modern times, there is an increasing interest in studying traditional medicinal practices and evaluating the therapeutic potential of these natural substances through rigorous scientific research. It is precisely because of the diversity of Chinese herbal medicines that the quality control of the herbal medicine industry is particularly important for the efficiency and safety of herbal medication products. So, integrative medicine approaches seek to combine the best practices from traditional and modern medicine to provide comprehensive and personalized healthcare solutions[4-6].

Advantages of Herbal Cosmetics over Synthetic

Herbal cosmetics are the modern trend in the field of beauty and fashion. These agents are gaining popularity as nowadays most women prefer natural products over chemicals for their personal care to enhance their beauty as these products supply the body with nutrients and enhance health and provide satisfaction as these are free from synthetic chemicals and have relatively less side-effects compared to the synthetic cosmetics.

Natural products

The name itself suggests that herbal cosmetics are natural and free from all the harmful synthetic chemicals which otherwise may prove to be toxic to the skin. Instead of traditional synthetic products different plant parts and plant extracts are used in these products, e.g. aloe-vera gel and coconut oil. They also consist of natural nutrients like Vitamin E that keeps skin healthy, glowing and beautiful. For example, Aloevera is a herbal plant species belonging to liliaceae family and is naturally and easily available. There are a rising number of consumers concerned about ingredients such as synthetic chemicals, mineral oils who demand more natural products with traceable and more natural ingredients, free from harmful chemicals and with an emphasis on the properties of botanicals.

Safe to use

Compared to other beauty products, natural cosmetics are safe to use. They are hypo-allergenic and tested and proven by dermatologists to be safe to use anytime, anywhere. Since they are made of natural ingredients, people don't have to worry about getting skin rashes or experience skin itchiness. Example - BHA (Butylated Hydroxyanisole) and BHT (Butylated Hydroxytoluene) are closely related

synthetic antioxidants and are used as preservatives in lipsticks and moisturizers. BHA and BHT can induce allergic reactions in the skin. The international Agency for Research on Cancer classifies BHA as a possible human carcinogen[7-9].

Compatible with all skin types

Natural cosmetics are suitable for all skin types. No matter if you are dark or fair, you will find natural cosmetics like foundation, eye shadow, and lipstick which are appropriate irrespective of your skin tone. Women with oily or sensitive skin can also use them and never have to worry about degrading their skin condition. Coal tar-derived colors are used extensively in cosmetics, Coal tar is recognized as a human carcinogen and the main concern with individual coal tar a color (whether produced from coal tar or synthetically) is they can cause cancer.

Wide selection to choose from

Natural cosmetics may still be a new type in the beauty industry but they already offer a variety of beauty products for all make up crazy people out there to choose from. One will find a variety of foundation, eye shadow, lipstick, blush, mascara, concealer and many more which are all naturally formulated. Furthermore, one will find locally made natural cosmetics or those made by famous designers worldwide. There exist a large variety of herbal extracts, to name a few Andrographis Paniculata (Kalmegh), Asparagus Racemosus (Shatawari), Boswellia Serrata (Salai Guggal), Asphalt (Shilajit) etc.

Fits your budget

Natural cosmetics are not that expensive. In fact, some of these products are more affordable than synthetic ones. They are offered at discounted prices and are sold for a cheap price during sales. Just need to survey enough to look for great deals. An estimate of WHO demonstrates about 80% of world population depends on natural products for their health care, because of side effects inflicted and rising cost of modern medicine. World Health Organization currently recommends and encourages traditional herbal cures in natural health care programs as these drugs are easily available at low cost and are comparatively safe.

Not tested on animals

Some cosmetics are initially tested on animals to ensure that they are safe and effective to use for human. However, natural cosmetics need not be tested on animals. These natural formulations are tested by experts in laboratories using state of the art equipment with no animals involved.

No side effects

The synthetic beauty products can irritate your skin, and cause pimples. They might block your pores and make your skin dry or oily. With natural cosmetics, one need not worry about these. The natural ingredients used assure no side effects; one can apply them anytime, anywhere. For example herbal cosmetics are free from parabens that are the most widely used preservative in cosmetics and can penetrate the skin[10-17].

Cosmeceuticals

'Cosmeceuticals' is fastest growing segment of the beauty industry. Cosmeceuticals are cosmetic-pharmaceutical products intended to improve the health and beauty of the skin by providing a specific result, ranging from acne-control and anti-wrinkle effects, to sun protection. The concept discovered by Dr. Albert klingman states that 'The Cosmeceuticals are topical agents that are distributed across broad spectrum of materials, lying somewhere between pure cosmetics (lipstick and rouge) and pure drug (antibiotics, corticosteroids).

Regulatory status of cosmeceuticals

The legal difference between a cosmetic and a drug is determined by a product's intended use. Under present concept, the boundary at which a cosmetic product becomes drug is not well-defined and different laws and regulations apply to each type of product. The drugs and cosmetic Act 1940 defines a drug and a cosmetic as; Drug-" All medicines for internal or external use of human beings or animals and all substances intended to be used for ; or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in humans or animals". Cosmetic-"Any article intended to be rubbed, poured, sprinkled or sprayed on or introduced into or applied to any part of the human body for cleansing, beautifying, promoting attractiveness or altering the appearance and includes any article intended for use as a component of cosmetic.

Cosmetic and drug: Some products meet the definitions of both cosmetics and drugs. This may happen when a product has more than one intended uses. For example, a shampoo is a cosmetic because its intended use is to clean the hair. An antidandruff shampoo is a drug because its intended use is to treat dandruff. Among the cosmetic/drug combinations are toothpastes that contain fluoride, deodorants that are antiperspirants and moisturizers with sun-protection claims. The claims made about drugs are subject to detailed analysis by the Food and Drug Administration (FDA) review and approval process, but cosmetics are not subject to mandatory FDA review. Although there is no legal category called cosmeceuticals, the term has found application to designate the products at the borderline between cosmetics and pharmaceuticals[18-24].

Federal Food, Drug and Cosmetic Act do not recognize the term itself. It is also often difficult for consumers to determine whether 'claims' about the actions or efficiency of cosmeceuticals are valid unless the product has been approved by the FDA or equivalent agency. Some countries have the classes of products that fall between the two categories of cosmetics and drugs: for example, Japan has 'Quasi-drugs'; Thailand has 'controlled cosmetics' and Hong Kong has 'cosmetic-type drugs'. The regulations of cosmeceuticals have not been harmonized between the USA, European, Asian and other countries.

2. Herbs Used in Cosmetics

There are numerous herbs available naturally having different uses in cosmetic preparations for skincare, hair care and as antioxidants, fragrant etc. Some of the important examples are as follows:

Skincare

Coconut oil: It is produced by crushing copra, the dried kernel, which contains about 60-65% of the oil. *Coconut oil* contains a high amount of glycerides of lower chain

fatty acids. *Coconut oil* is derived from the fruit or seed of the coconut palm tree *Cocos nucifera*, family Arecaceae. The melting point of coconut oil is 24 to 25°C (75-76ºF) and thus can be used easily in liquid or solid forms and is often used in cooking and baking. Coconut oil is excellent as a skin moisturizer and softener.

Sunflower oil: It is the non-volatile oil extracted from sunflower seeds obtained from *Helianthus annuus*, family Asteraceae. Sunflower oil contains lecithin, tocopherols, carotenoids and waxes. It has smoothing properties and is considered non-comedogenic.

Jojoba oil:

It is a mixture of long chain, linear liquid wax esters extracted from the seeds of the desert shrub *simmondsia chinenesis*, family simmondsiaceae. Jojoba oil is easily refined to remove any odor, color it is oxidatively stable, and is often used in cosmetics as a moisturizer and as a carrier oil for exotic fragrances. Human sebum and jojoba oil are virtually identical. Sebum protects and moisturizes the skin and hair but is stripped away by chemicals, pollutants, sun and the aging process, resulting in dry skin and hair. Jojoba oil replenishes what skin and hair lose and restores them to their natural pH balance[25-28].

Olive oil:

This oil is a fixed oil extracted from the fruits of olea europaea, family oleaceae. The major constituents are triolein, tripalmitin, trilinolein, tristearate, monosterate, triarachidin, squalene, β-sitosterol and tocopherol. It is used as skin and hair conditioner in cosmetics like lotions, shampoos etc. It is a potent fatty acid penetration enhancer.

Aloevera:

Aloevera is a herbal plant species belonging to liliaceae family that is found only in cultivation, having no naturally occurring populations, although closely related aloes do have presence in northern Africa. It is an ingredient in many cosmetics because it heals, moisturizes, and softens skin. Simply cut one of the aloe vera leaves to extract the soothing gel.

Antiaging

Rhodiola rosea-Rhodiola rosea: It is commonly known as golden root, roseroot, Aaron's rod, arctic root, king's crown, *lignum rhodium*, orpin rose. It is a plant in the Crassulaceae family that habitats in cold regions of the world. It grows mainly in dry sandy ground at high altitudes in the arctic areas of Europe and Asia, Traditional folk medicine used R. rosea to increase physical endurance, work productivity, longevity, resistance to high altitude sickness, and to treat fatigue, depression, anemia, impotence, gastrointestinal ailments, infections, and nervous system disorders. R. *rosea* is rich in phenolic compounds, known to have strong antioxidant properties.

Carrot:

It is obtained from the plant Daucus carota belonging to family Apiaceae. It is a valuable herb since ages as due to its richness in Vitamin A along with other essential vitamins. Carrot seed oil is used as anti-aging, revitalizing and rejuvenating agent. The carrot gets its characteristic and bright orange colour from β-carotene, and lesser amounts of α-carotene and γ-carotene. α and β-carotenes are partly metabolized into vitamin A in humans.

Gingko: In China and Japan, the leaves and nuts of the Ginkgo biloba (G. biloba) tree have been used for thousands of years to treat various medical conditions, including poor blood circulation; hypertension; poor memory, and depression, particularly among the elderly; male impotence. In addition, it is gaining a similar reputation as an antioxidant and anti-inflammatory agent. *Ginkgo biloba* belongs to family *Ginkgoaceae, which* grows to a huge size. The *G. biloba* extract EGb 761, prepared from the tree's leaves, is a natural mixture containing flavone glycosides (33%), mostly quercetin and kaempferol derivatives, and terpenes (6%), which has exhibited the capacity to reduce the number of ultraviolet B (UVB)-induced sunburn cells in mice.

Dandruff treatment

Ayurveda has numerous natural medications wherein the most common herbs include Neem, Kapoor (naphthalene), and Henna, Hirda, Behada, and Amalaki, Magic nut, Bringaraj, Rosary Pea, Sweet Flag, Cashmere tree and Mandor.

Henna: Henna comes from the plant *Lawsonia inermis* family Lythraceae, which contain a dye molecule called Lawsone, which when processed produces Henna powder. Besides lawsone other constituents present are gallic acid, glucose, mannitol, fats, resin (2%), mucilage and traces of an alkaloid. Leaves yield hennatannic acid and an olive oil green resin, soluble in ether and alcohol[29-32].

Neem: Neem or Margosa is a botanical relative of mahogany. It belongs to the family *Meliaceae*. The Latinized name of Neem- *Azadirachta indica*-is derived from the Persian.

Skin Protection

Green tea: The tea plant (*Camellia sinensis*) has been cultivated in Asia for thousands of years]. The 4 major polyphenolic catechins present in green tea leaves are (2)-epicatechin (EC), EGC, (2)-EC-3-gallate, and EGCG, which is the most abundant. It was found that green tea extracts or an individual green tea polyphenol (GTPP), especially epigallocatechin (EGC)-3-gallate (EGCG), inhibited two-stage chemical carcinogenesis (eg, induced by 7,12-di-methylbenz(a)anthracene [DMBA] and 12-O-tetradecanoylphorbol 13-acetate [TPA]), and photocarcinogenesis (induced by UVB).

Calendula:

Calendula officinalis is reported to have a remarkable antioxidant activity, anti- inflammatory activity and wound healing activity. A previous study demonstrated that the essential oil of Calendula consists mainly of α-thujene, α-pinene, 1,8-Cineole, dihydrotagetone and T-muurolol.

Turmeric:

It is a deep yellow-to-orange powder that comes from the underground stems of the tropical perennial herb *Curcuma longa* of the family *Zingiberaceae*. Turmeric contains a wide range of phytochemicals including, demethoxycurcumin, bisdemethoxycurcumin, zingiberene, curcumol, curcumenol, eugenol, tetrahydrocurcumin, triethylcurcumin, curcumin, turmerin, turmerones, and turmeronols. Curcumin is the phytochemical that gives a yellow color to turmeric and is now recognized as being responsible for most of the therapeutic effects.

Haircare

Amla: Amla is the name given to the fruit of a small leafy tree (*Emblica Officinalis*), which grows throughout India and yields an edible fruit. It is highly praised both for its high vitamin C content and for the precious oil, which is extracted from its seeds and pulp and used as a treatment for hair and scalp problems. It is used in eye syndromes, hair loss, and children ailments etc.

Shikakai:

Acacia concinna Linn. (*Leguminosae*) is a medicinal plant that grows in tropical rainforests of southern Asia. The fruits of this plant are used for washing hair, for improving hair growth, as an expectorant, emetic, and purgative. The powder of *Acacia Concinna Linn* shows the presence of saponins, alkaloid, sugar, tannin, flavanoids, anthraquinone glycosides.

Essential oils

Rose oil: Roses are widely referred to as the world's favorite **Figure 10**: Neem leaves. flower in part due to their vast diversity in plant habitat and floral characteristics. There are mainly four species of roses for oil production. These are Rosa damascena Mill., *R. gallica L., R. moschata Herrm*. and R. centifolia L. Rose oil and rose water have many therapeutic effects. Rose oil helps soothe the mind and heals depression, grief, nervous stress and tension. It also helps to heal wound and skin health.

Eucalyptus oil:

There are around 700 different species of Eucalyptus in the world, of which at least 500 produce a type of essential oil. It is produced by steam distillation from the leaves of Eucalyptus species (*E. cinerea F. Muell., E. baueriana F. Muell., E. smithii R. T. Baker, E. bridgesiana R. T. Baker, E. microtheca F. Muell., E. foecunda Schau., E. pulverulenta Sims, E. propinqua Deane and Maiden, E. erythrocorys F. Muell.*) etc. They are widely used in the preparation of liniments, inhalants, cough syrups, ointments, toothpaste and also as pharmaceutical flavors. The European Pharmacopoeia monograph for Eucalyptus oil sports a chromatographic profile: 1,8-cineole (eucalyptol; not less than70%), limonene (4- 12%), α-pinene (2-8%), α- phellandrene (less than 1.5%), β-pinene (less than 0.5%), camphor (less than 0.1%).

Antioxidants

Tamarind: Tamarind or Tamarindus indica L. of the *Fabaceae,* subfamily *Caesalpinioideae* consists of amino acids, fatty acids and minerals of tamarind plant parts. The most distinguished characteristic of tamarind is its sweet acidic taste due to tartaric acid. Besides being a rich source of sugars, tamarind fruit is also an excellent source of vitamin B and contain minerals, exhibit high antioxidant capacity that appear to be associated with a high phenolic content, and thus can be an important food source.

Vitamin C: Vitamin C is necessary for the hydroxylation of proline, procollagen, and lysine. Vitamin C improves the changes caused by photo damage. Vitamin C has been used effectively to stimulate collagen repair, thus removing some of the effects of photo-aging on skin.

Vitamin E:

(Alpha-tocopherol) is the major lipophilic antioxidant in plasma membranes and tissues. The term vitamin E collectively refers to 30 naturally occurring molecules (4 tocopherols and 4 tocotrienols), all of which exhibit vitamin E activity. Its major role is generally considered to be the arrest of chain propagation and lipid peroxidation by scavenging lipid peroxyl radicals, hence protecting the cell membrane from destruction[33-36].

Herbal therapy for skin disorders has been used for thousands of years. Even our biologically close relatives, the great apes, use herbal self-medication. Specific herbs and their uses developed regionally, based on locally available plants and through trade in ethnobotanical remedies. Systems of herbal use developed regionally in Europe, the Middle East Africa, India China, Japan, Australia, and the Americas. Two well-known systems still in use are the Ayurvedic herbs in India and herb combinations developed as part of traditional Chinese medicine (TCM) in China. In Europe and the United States, use of herbs declined as purified extracts and synthetic chemical drugs became available. In recent years, there has been a resurgence of the use of herbs due to the following reasons: the side effects of chemical drugs became apparent, there was a call to return to nature, natural remedies became a part of the green revolution, and there was a return to organic produce. Herbal remedies, including those for skin disorders, are currently gaining popularity among patients and to a lesser degree among physicians. In Asia, especially in China and India, herbal treatments that have been used for centuries are now being studied scientifically. In Germany, the regulatory authority Commission E oversees herbal preparations and their recommended uses. Currently, the United States does not regulate herbal products except as dietary supplements. There is no standardization of active ingredients, purity, or concentration. There are also no regulations governing which herbs can be marketed for specific indications.

In India, records of Ayurvedic medicine date back to about 3000 BC. The system of Ayurvedic medicine combines physiological and holistic principles. It is based on the concept that the human body consists of five energy elements that also make up the universe: (1) earth, (2) water, (3) fire, (4) air, and (5) space. The interactions of these five elements give rise to the three *doshas* (forces), seven *dhatus* (tissues), and three *malas* (waste products). All diseases are attributed to an imbalance among the three *doshas*. Diagnosis is made by an elaborate system of examining the physical findings, pulse, and urine, as well as by an eightfold detailed examination to evaluate both the physical and mental aspects of the condition. The treatment is then tailored to suit an individual based on the findings.

Records of TCM date back to about 4000 years. Similar to Ayurvedic medicine, TCM also is aimed at treating the whole person. It is based on the complementary forces *yin* and *yang*. In healthy individuals, yin and yang are in balance, and illness occurs when there is inequality between the forces. The Chinese also recognize five elements: (1) earth, (2) water, (3) fire, (4) air, and (5) metal, each related to specific organs. In addition, they recognize a

flow of energy, called *chi* or *qi*, through the body in 14 major meridians. The Chinese evaluate the exchange between the environment and the body, such as food, drink, and air into the body and waste leaving the body. Special attention is given to the physical examination of the tongue, iris, and pulses of the individual to determine the cause of the imbalance and then to determine the appropriate individual treatment. Treatment is usually a mixture of herbs, massage, and acupuncture.

In Western medicine, herbal therapy began as folk medicine. In the United States, it began in the colonial days, when homemade botanicals were used by women at home. Native American use of botanical treatments also greatly influenced the use of herbal therapy in the United States. Iroquois medical botanicals in the northeastern United States became well known to the colonists. In the nineteenth century, these Old World European and Native American traditions were expanded and used by a group of physicians known as the "eclectics." As herbal medicine continued to develop in the United States, it was further influenced by European and Chinese practices.

Herbal therapy has increased in popularity in the past two decades among patients seeking alternative treatments to conventional Western allopathic medicine. The number of visits to alternative medicine practitioners in the United States has grown rapidly and in 1997 it was estimated to be 629 million, surpassing the number of visits to all primary care physicians. Approximately US$27 billion was spent on these alternative therapies in 1997, of which US$3.24 billion was spent on herbal therapy. It has been estimated that about 50% of the population uses some form of alternative medicine. Many patients choose not to tell this information to their physicians. The group most likely to use unconventional treatment modalities according to a previous survey consisted of nonblack, college-educated individuals between the ages of 25 and 49 years, having an annual income greater than US$35,000. Most patients seek alternatives because conventional therapy has failed to help them sufficiently or because they feel there are fewer side effects with the natural products.

The recent increase in the use of alternative medicine has led to more research regarding alternatives and requires education of physicians on the subject to enable them to better inform and care for their patients. In the United States, herbal remedies continue to be sold as dietary supplements, with no standards of potency and efficacy required currently. The Dietary Supplement Health and Education Act of 1994 did set purity standards for some commonly used herbs. In Germany, a regulatory authority known as Commission E extensively reviewed common European botanicals. In all, Commission E evaluated the quality of evidence for the clinical efficacy, safety, and uses of 300 herbal preparations. In Germany, this information has led to standardization of herbal treatments. A number of herbal therapies have stood the test of time for their efficacy in treating dermatologic conditions, with a few having significant scientific evidence of usefulness[37].

With alternative herbal therapies, an individual patient often treats himself or herself, many times without high-quality professional advice. Patients are advised to ensure the safe use of herbal therapies by deciding on health goals; informing themselves on efficacy, safety, interactions, and usage of the medicine; selecting therapies that are likely to achieve their goals; having a correct diagnosis before using the therapy; consulting reputable practitioners; informing the practitioners about all the remedies they are using; monitoring the effects of the remedies, both positive and negative; waiting patiently for effects to become noticeable; and adjusting doses as needed to accommodate surgery, illness, or changes in conventional therapy. Product-labeling information that the patient should look for includes the name and composition of the product, including the parts of the plant and quantity of raw material used, daily dosage and timing of dosages, allergy and other warning statements, quality and safety testing, expiration date, manufacturer, country of manufacture, claims and indications for use, and details on how to store the product.

3. Types of Bases Used In Herbal Creams

Oleaginous bases

It is consists of oil and fat.

It is anhydrous non- washable and do not absorb water.

Petroleum (soft paraffin): -

Semi solid hydrocarbon + lubricating oil

Yellow soft paraffin: - obtained from petroleum also may contain anti-oxidant like vitamin E and BHT. Melting range: - 38 to 56°c II.

White soft paraffin: - obtained from petroleum.

Melting range: - 38 to 56°c

Hard paraffin: - mixture of solid hydrocarbon obtained from petroleum.

Solidifies: - 50 to 57 °C

Liquid paraffin: - It is a mixture of liquid, hydrocarbon obtained from petroleum.

Absorption bases

- Composition base + w/o surfactant
- Water content: - anhydrous
- Solubility in Water: - insoluble
- Spread ability: - difficult
- Wash ability: - non washable
- Stability: - oil poor, hydrocarbon better
- Drug incorporation: - solid oil and aqueous solution
- Drug Release: - Poor but greater than oleaginous
- Example: - wool fat (anhydrous lanolin) absorbed 50% of water its own weight.
- Hydrous wool fat (lanolin): - 70% W/W wool fat + 30 % W/W purified water.
- It is a w/o emulsion.

Water miscible bases

They are miscible with an excess of water ointment made from water miscible bases are easily remove after use. There are three official anhydrous Water miscible ointment base.

Example: Emulsifying ointment B.P.: - anionic emulsifier, ceterimide Emulsifying ointment B.P.: - cationic emulsifier. Cetomacrogel Emulsifying ointment B.P. - Non- ionic

emulsifier. It is used for O/W creams. Compound benzoic acid ointment used as antifungal ointment.

Water soluble bases:

Water soluble bases contain only the water soluble ingredients and not the fats or other greasy substance hence, they are known as grease less bases. Water soluble bases consists of water-soluble ingredients such as polyethylene glycol polymer (PEG) which are popularly known as carbowaxes and commercial known as macrogols.

Example: Macrogol 200, 300, 400: - viscous liquid
Macrogol 1500: - greasy semi solid
Macrogol 1540, 3000, 4000: - waxy solids

Advantages of Herbal Cream

- They do not provoke allergic reaction and do not have negative side effects
- They are easily incorporated with skin
- When small quantity they are very effective as compared to synthetic cosmetic
- Extract of plant decreases the bulk property of cosmetics and gives appropriate pharmacological effects.
- Easily available and found in large variety and quality.
- Easy to manufactures and cheap cost.

Disadvantages of Herbal Cream

- Herbal drugs have slower effects as compare to Allopathic dosage form. Also, it requires long term therapy.
- They are difficult to hide taste and odour.
- Most of the herbal drugs are not easily available.
- Manufacturing process is time consuming and complicated.
- No pharmacopoeia defines any specific procedure or ingredients to be used in any of herbal cosmetics.

Benefits of Herbal Creams

- Treats pimples and acne
- Controls excess oil secretion
- Makes the skin softer and smoother
- Maintains pH balance of the skin
- Suitable for all skin types
- 100% cruelty-free
- Easily available
- Economical
- It enhances the energy level of the body
- Variety of phyto-constituents can be incorporated.

Ideal Properties of Herbal Cream

- It should liquefy at body temperature
- It should not normally be diluted
- Should give a cooling effect on the skin after external application
- Less greasy than ointment and easily spread on the skin
- The pH of the cold cream must be optimum from 4.6-6.0
- It should penetrate the epidermis (via natural process)
- Its viscosity should be low enough to permit easy spreading
- It should be non-toxic

Anatomy of Skin

Skin is the largest organ in the body and covers the body's entire external surface. It is an impressive and vital organ. It is a fleshy surface with hair, nerves, glands and nail. It consists of hair follicles which anchor hair strands into the skin. It act as barrier between outside and inside environment. It is made up of three layers, the epidermis, dermis, and the hypodermis, all three of which vary significantly in their anatomy and function. The skin's structure is made up of an intricate network which serves as the body's initial barrier against pathogens, UV light, and chemicals, and mechanical injury. The skin has different thickness and textures. It also regulates temperature and the amount of water released into the environment. It allows sensation such as touch, heat, and cold. It also guards the bones, muscles and other vital organs of our body.

Skin Thickness The thickness of each layer of the skin varies depending on body region and categorised based on the thickness of the epidermal and dermal layers. Hairless skin found in the palms of the hands and soles of the feet is thickest because the epidermis contains an extra layer, the stratum lucidum. The upper back is considered thickest based on the thickness of the dermis, but it is considered "thin sin" histologically because the epidermal thickness lacks the stratum lucidum layer and is thinner than hairless skin. The Epidermis The epidermis is the outermost layer of the skin, and protects the body from the environment. The thickness of the epidermis varies in different types of skin; it is only .05 mm thick on the eyelids, and is 1.5 mm thick on the palms and the soles of the feet.

The epidermis contains the melanocytes (the cells in which melanoma develops), the Langerhans' cells (involved in the immune system inthe skin), Merkel cells and sensory nerves. The epidermis layer itself is made up of five sub layers that work together to continually rebuild the surface of the skin: Layers of Epidermis The layers of the epidermis include the stratum basale (the deepest portion of the epidermis), stratum spinsum, stratum granulosum, stratum lucidum and stratum corneum (the most superficial portion of the epidermis). Stratum Basale It is also known as stratum germinativum, is the deepest layer, separated from the dermis by the basement membrane (basal lamina) and attached to the basement membrane by hemidesmosomes. The cells found in this layer are cuboidal to columnar mitotically active stem cells that are constantly producing keratinocytes. This layer also contains melanocytes. Stratum Spinosum It is also known as prickle cell layer. It has 8-10 cell layers and contains irregular, polyhedral cell with cytoplasmic processes, sometimes called "spines" that extend outward and contact neighbouring cells by desmosomes. Dendritic cells can be found in this layer. Stratum granulosum It consists of 3-5 cell layers, contains diamond shaped cells with keratohyalin granules and lamellar granules. Keratohyalin granules contain keratin precursors that eventually aggregate, crosslink, and form

bundles. The lamellar granules contain the glycolipids that get secreted to the surface of the cells and function as glue, keeping the cells stuck together. Stratum lucidum.

It consists of 2-3 cell layers, present in thicker skin found in the palms and soles, is a thin clear layer consisting of eleidin which is a transformation product of keratohyalin. Stratum corneum It consists of 20-30 cell layers, is the uppermost layer, made up of keratin and horny scales madeup of dead keratinocytes, known as anucleate squamous cells. This is the layer which varies most in thickness, especially in callused skin. Within this layer, the dead keratinocytes secrete defensins which are part of our first immune defense. Dermis The dermis is connected to the epidermis at the level of the basement membrane and consists of two layers, of connective tissue, the papillary and reticular layers which merge together without clear demarcation. The papillary layer is the upper layer, thinner, composed of loose connective tissue and contacts epidermis. The reticular layer is the deeper layer, thicker, less cellular, and consists of dense connective tissue/ bundles of collagen fibres. The dermis houses the sweat glands, hair, hair follicles, muscles, sensory neurons, and blood vessels. Hypodermis The hypodermis is deep to the dermis and is also called subcutaneous fascia. It is the deepest layer of skin and contains adipose lobules along with some skin appendages like the hair follicles, sensory neurons, and blood vessels.

Preparation of Herbal creams

Slab method:

The components are mixed until a uniform preparation is attained. One small scale, as in extemporaneous compounding, other will use an ointment mill. If components of an ointment react with metal hard rubber spatula may be used. Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab technique or extemporaneous method of preparation of cream.

Trituration method:

Use for finely divided insoluble powder particles or liquid. Insoluble powder is added by geometric dilution. Liquid is added by making well in center and avoid air pocket formation. Reduce the solid medicament to fine powder medicaments is mixed with small amount of base on ointment slab with a stainless steel spatula until a homogenous products in formed[38-40].

Fusion method:

Fusion is the act or procedure liquefying or melti`ng by the application of heat. By fusion method, all or some of the components of an ointment are combined melted together and cooled with constant stirring until congealed. Ointment base are melted decrease order of their melting point. Highest melting point should be melted first low melting point next. This avoid over heating of substance of low melting point incorporate medicament slowly to the melted mass stir thoroughly until mass cools down and homogenous products is formed.

Evaluation of Multi-Purpose Herbal Cream

Physical properties: The cream was observed for the colour, odour and appearance.

Physicochemical Evaluation

Washability: The ease of removal of the cream applied was examined by washing the applied part with tap water and the ease with which the washing of the cream was observed.

pH of the Cream: The pH meter should be calibrated using standard buffer solution. About 0.5 g of the cream was taken and dissolved in 50.0 ml of distilled water then pH was measured using pH meter.

Spreadability:

Cream was placed between two glass slides and compressed to uniform thickness by placing 100 g of weight for 5 min. A weight was added to the pan. The timerequired to separate two slides i.e., time in which upper glass slide moved over lower slide was taken as a measure of spreadability

S=m*l/t m = weight on upper slide l= length moved on a glass slide t = time taken.

Irritancy test:

An area (1sq.cm) on the lefthand dorsal surface was used for this purpose. The cream was applied to the specified area and time was noted. Irritancy, erythema, edema, was checked if any for regular intervals up to 24 hr20 .

Phase separation:

The prepared cream was transferred in a suitable wide mouth container. Set aside for storage the oil phase and aqueous phase separation were visualizing after 24hours

Viscosity:

Viscosity of cream was done by using Brooke field viscometer at the temp of 250C using spindle no, 63.at rpm.

Homogeneity: Homogeneity was tested via the visual appearance and test.

After feel:

Emoliency slipperiness and amount of residue left after the application of the fixed amount of cream was found to be good. Test for microbial growth: Agar media was prepared then the formulated cream was inoculated on the plate's agar media by steak plate method and a controlled is prepared by omitting the cream. The plates were placed in the incubator and are incubated in 370C for 24 hours. After the incubation period, the plates were taken out and the microbial growth were checked and compared with the control

Dye test:

The scarlet red dye is mixed with the cream. Place a drop of the cream on a microscopic slide then covers it with a cover slip, and examines it under a microscope. If the disperse globules appear red the ground colourless. The cream is o/w type. The reverse condition occurs in w/o typecream i.e., the disperse globules appear colourless.

Stability Study:

Temperature Variation: Stability testing of prepared formulation was conducted by storing at different temperature conditions for specific period of time. The packed glass vials of formulation stored at different temp., conditions and were evaluated for physical parameters like color, odour, consistency, PH etc.

Light Exposure Testing:

The product is placed in its actual packaging at direct sunlight for 48 hours to check and discoloration of the product.

4. Conclusion

The chemical formulation of all these cosmetic products includes addition of various natural additives like waxes, oils natural color, natural fragrances and parts of plants like leaves, etc. The Cosmeceuticals are agents that lie somewhere between pure cosmetics (lipstick and rouge) and pure drug (antibiotics, corticosteroids) methods. The cosmetic products are the best option to reduce skin problems such as hyper pigmentation, skin wrinkling, skin aging and rough skin texture etc[41-42]. The demand of herbal cosmetic is rapidly expanding. The advantages of herbal cosmetics are lower cost, side effects free, environmental friendly, safe to use etc. Also has a great future ahead as compared to the synthetic cosmetics. A few randomized, controlled trials have also demonstrated significant results in the use of herbal therapies for the treatment of dermatologic disorders. Some countries, such as Germany, now require standardization of herbal preparations and specific recommendations as to the use and efficacy of herbs in the treatment of disease. It is important to know what common herbal alternatives exist and which potential adverse effects or interactions can occur to permit more effective counseling of patients.

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