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REVIEW ARTICLE

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Ethnotherapeutical uses of some Medicinal Plants for Skin disorders

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ABSTRACT

The clinical applications of 25 indigenous medicinal plants and some phytochemicals isolated from few of them viz. glycyrrhetinic acid, menthol, β-carotene, saponins glycosides, B-sitosterol glycosides etc, showed promising results in treatment of several skin disorders viz. microbial infections, bullous specify lesions, pemphigus, allergic, inflammatory and traumatic conditions. Some of them were highly effective in wound healing, pigmentary disorders and atherosclerotic changes in dermal tissues also prevented wrinkling and loss of skin elasticity in aging person.
Keywords: Ethnotherapeutics, Medicinal Plants, Skin Disorders and Glycyrrhetinic acid.

INTRODUCTION

Our body consists of variety of cells surrounded by bimolecular lipoproteinaceous membrane, embedded with number of receptors which can be activated by variety of stimuli and each cell serves as a unit. Dermal tissue, is no exception. Healthy skin, in addition to performing its usual functions, gives beautiful appearance to the body.

Such dermal tissue is under influence of a large number of internal as well as external factors (genetic extremes of ages, physiological variations like pregnancy, lactation, immunity, species variations, diseases, climate, diet, pollution, co-medication and habits etc.). These factors can bring changes in the skin tissue. Today the understanding of pathopysiology of cutaneous disease permits us the usage of drugs on a more rational and scientific basis for such skin tissue alterations. In past te bland oils, emollients, astringents, volatile oils, resins of the plant origin have been used and are also beingh used even today. In Ayurveda numbers of herbal drugs advocated are being restudied using the modern methodologies to substantiate earlier claims.

For various skin disorders, we need drugs which have been obtained from different sources such as from animals, herbs, sea, fungi and I recent past during the last 6 to 7 decades from synthetic sources. Since the incidence of drug reactions is increasing with synthetic drugs, thus drugs obtained from medicinal plants sources have gained considerable importance in recent years all over the World.

Skin Disorders

1. Microbial Disease (Bacterial, Viral and Fungal)

The greatest danger to any tissue including skin tissue is due to large number of microbes. The antimicrobials obtained from different microbial world (Fungi, antinomycetes and bacteria) or from synthetic procedures have changed the outlook of many serious infections, however, problem of emergence of resistance as well as toxicity has often limited their usage thus we need to have drugs from alternate source. *Vitex negundo* (Nirgundi), *Curcuma longa* (Haldi), *Melia azadirachta* (Neem), Claycopteris floribunda (Swetdhataki), *Valeriana wallichii* (Tagara), (Wealth of India, 1976), have been reported to have antibacterial activity which may be of use in skin disorders. In addition Glycyrrhetinic acid has been reported to be effective in cases of conjunctivitis and similar reports have also been published with the methanolic extract of *Cyperus rotundus*.

Similarly in addition to antibacterial and antifungal effects mainly against dermatophytes have been reported with *Hemidesmus indicus* (Anatamula), *Cassia fistula* (Aragvadha), (Monograph of CCRAS), *Ocimum sanctum* (Tulsi), *Curcuma zedoria* (Karcura), (Monograph of CCRAS), *Astercantha longifolia* (Kokilaksa). Such reports in Scientific literature need to be studied in details including their possible underlying mechanism of action so as to use these agents on a more scientific rational basis and such studies may also give a lead report to produce or discover new products from natural sources.

The treatment of viral dermal disorders in modern system of medicine is even today is not very satisfactory and disease like AIDS is the dreaded disease of the decade. The antiviral drugs have enough scope to discover soft drugs from medicinal plants. *Cynodon dactylon* (Durva) has been reported to be beneficial for vaccinia, herpes and pox (Monograph, CCRAS) *Picrorrhiza kurroa* (Kutki) works by stabilizing mast cells and *Curcuma longa* (Haldi), is said to be effective antiviral in herpes. A new antiviral agent identified as diosgenin saponin isolated from *Lawsomia alba* Lam. (Mehndi), fruits also displayed potential activity against viral infections. Similarly β sitosterol glycosides of medicinal plants origin displayed antiviral activity have also been reported.

2. Bullous Lesions

Among the bullous lesions, Pemphigus is the most notorious one and symptoms could only be controlled with large doses of Prednisolone. However, Glycyrrhiza glabra (Mulethi) has been shown to reduce doses, of prednisolone significantly without reappearance of bullae in serious cases of permphigus.

3. Allergic conditions

Glycyrrhetinic acid (an active constituent of *Glycyrrhiza glabra*) has been reported to give excellent response in several cases, over a period of 2 days to one month in patients having allergic conjunctivitis from 2-7 days. However, its systemic use is not of much value due to its quick elimination from the body.

4. Inflammatory and traumatic conditions

In patients, it is reported a comparable of *Glycyrrhiza glabra* to oxyphenbutazone in a controlled clinical study in terms of decrease in pain pyrexia, slough formation and oedema. Similar results have also been reported in cases of minor surgical inflammatory conditions and in submandibular adenitis. In addition a large number of indigenous drugs such as *Cyperus rotundus, Curlcuma longa* (Haldi), and *Melia azadirachta* (Neem), and *Picrorrhiza kurroa*, have been tested for its allergic potentials by patch test and was found to be devoid of this. In a view to use its antiseptic potential in cosmetics without any allergic property.

5. Wound Healing

On the basis of the tensile strength as a criteria i.e. weight required to tear the sutured wound, topical application of Kampilliaka has been shown to be better as compared to Neosporin taken as standard group on all the days i.e. 3^{rd} , 9^{th} and 11^{th} days (monograph CCRAS). Similarly on the basis of initial and final wound measurements, 20 % ointment of Kampilliaka was found to be nearly two times better as compared to Neosporin treated group (Monograph CCRAS). Similarly on a wider scale in cases of facial injuries involving mandibular fractures I man, mean period of clinical healing of fractured end of mandibles was found to be significantly reduced with *Ocimum sanctum* (Tulsi), *Cissus quadrangularis* (Harjor), and *Withania somnifera* (Ashwagandha) as compared to control cases. Similarly on the basis of the criteria of biting force, *Ocimum sanctum* as well as *Cissus quadrangularis* have been shown to enhance healing significantly.

6. Pigmentary Disorders

Genetically defective tyrosine metabolism leading to albinism or acquired demelanisation is cosmetically unacceptable and is a social stigma even though it is not contagious disorders. None of the agents so far used have been very successful. Variable response has been reported with Babchi and it preparations including PUVA therapy, Ami majus, mehandi, chiroji oil, Leucas cepholotes (Dronapuspi) (Monograph CCRAS). Effect of many such plants including Calophylloide showing variable melanising effect clinically is due to the presence of furocomarines exhibiting photosensitivity and due to capillary permeability increasing properties and antiiflammatory, actions.

7. Miscellaneous

Albizzia lebbeck (Sirisa) has been reported to be effective in atropy and allergy, β carotene and Melia azadirachta are very well known to be effective in acne. Berberin an active constituent is known to be antitrachoma strobilathes hevneanu said to be effective in monoplegia. *Asparagus racemosus* (Satavari) has been shown to be value in epidermal cancer (monograph CCRAS). The concentrated ethanolic extract of *Melia azadirachta* prepared in sodium propyl paraben 0.1 % w/w and sodium methyl paraben 0.2 % w/w cream base when applied on skin for thrice a day completely cure eczema in a week of application.

Aging of skin tissues is of utmost cosmetic value. During aging continuously replicating cells or cells replicating in response to various stimuli stop replication which is mainly governed by genetic coding. Skin tissue is no exception to this rule. Degenerative and atherosclerotic changes in skin tissues and in the supplying blood vessels set in to lead wrinkles and loss of elasticity as is reflected clearly on the dermal mirror of aging person. Onset of such changes can be delayed by counteracting some of the exogenous as well as some of the endogenous

factors by exercise, good diet, massage and use of moisturizers and other well known methods of applying various types of creams, lotions and "Ubtons" but soft herbal adaptogenic drugs *Ocimum sanctum. Panax ginseng, Withania somnifera* may be of value as these bring back the normal physiological sate of skin. Pharmacodynamic studies of fine receptors and ligand studies may be value for discovering better drugs for aging and other skin disorders.

Dermal Formulations

When one is going to formulate any preparation for any of the dermal disorders, may be from ayurvedic or herbal source, must always keep in mind the following factors:-

Skin is a membrane barrier and precutaneous diffusion is an important modality for carrying drugs across such a barrier and obviously the physico chemical characteristics of the formulation viz the lipid solubility ionization factor, concentration gradient, pka value are important determinants for the efficacy of the drug in addition to its size of particle (hence the importance of triturisation in ayurveda) and the vehicle (hence many ayurvedic preparations were given in ghee, cud, milk, oil and in wax). In addition to above drug factors, for the efficacy of the drug some of the dermal tissue factors are equally important such as the hydration of the stratum corneum, surface area, regional dermal thickness and the blood flow in addition to the degenerative aging factors in old age. Pathological factors affecting dermal tissue such as inflammatory, degenerative traumatic factors also determine the efficacy or toxicity of such formulations.

Thus manufacturers must consider above factors for formulation of better and soft dermatological agents from Herbal or Ayurvedic sources. As is advocated in modern system of medicine, mono herbal preparations are bound to be more preferred and acceptable at global level their standardization may be relatively easy as compared to poly herbal preparations. Isolating active principle from such preparations may be futile exercise as the active principle may be toxic or may not be act enough as it is in natural combination, however, this will be of value standardization or the preparation or for giving a lead to synthesize molecules. Isolating active principle may be also lead to altered pharmacokinetic (drug movement in the body) as well as after pharmacodynamics (action at receptor target) eg. Glycyrrhetinic acid, linseed oil containing pre dominantly and α-Linolenic acid and menthol obtained from *Mentha piperata*, we use for inflammatory conditions though was of value topically but ineffective systematically as its disposal and excretion is very quick compared to *Glycyrrhiza glabra*. Very often semi-synthetic preparations prepared by taking lead from natural sources (eg. Tretinocin, etretinate, Isotretinoin) although effective but are very toxic as compared to natural and soft drugs (like carotene).

Thus softness of therapy with a God gifted natural product is lost. When isolating the active principle or synthesizing its analogue hence global research is getting redirected towards natural sources as compared to synthetic ones showing greater incidence of adverse drug reactions.

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