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SARIVA (*HEMIDESMUS INDICUS*): AN ANCIENT MIRACULOUS BREAKTHROUGH TO CURE ACNE VULGARIS

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ABSTRACT

Acne is anticipated to affect 9·4% of the global population, making it the eighth most prevalent disease globally. It is one of the commonest diseases distressing humanity and has significant impact on quality of life. The new approach of herbal therapy can be a promising alternative management to combat with this condition. *Sariva* (*Hemidesmus indicus*) may be a better proven option to cure acne, due to it's multidimensional properties like Raktashodhak, Vishaghna, Krimighna etc. In other hands many recent research work has been compiled and collected in this paper also to prove it's antioxidant, anti-inflammatory, antimicrobial properties which can be helpful in shattering the vicious pathogenetical cycle of acne.

KEYWORDS: *Hemidesmus indicus, Sariva, Anantamula,* Anti-acne, *Yuvanpidika.*

INTRODUCTION

Sariva consists of root of *Hemidesmus indicus* (HI) (Linn.) (Fam. *Asclepiadaceae*), a prostrate or semi-erect shrub found throughout India from upper Gangetic plains east-wards to Assam, throughout Central, Western and Southern India up to an elevation of 600 m.[1] *Sariva* with a synonym *Anantamula* has cooling, sweet, bitter properties with affinity for *raktadhatu*, cures inflammation from the skin and liver, making it a good choice for eczema, psoriasis, urticaria, acne rosacea and acne from aggravated *Bhrajaka Pitta*. It is used as an external paste or as a cream and may be combined with *nimba*, *manjishtha*, *guduchi*, *gotu kola*, *sandalwood* and *liquorice* for skin inflammation.[2] Further the extracts from the root

are used as a coolant and a blood purifier. Various effects of HI, such as hypoglycemic, hypolipidemic, antioxidant, antithrombotic, antiinflammatory, antiulcerogenic, hepatoprotective, renoprotective and neutralization of viper venom have been reported.[3] It mainly comprises saponins, tannins, hemidesmine, hemidesmol, hemidesterol, stearoptin, pregnane glycosides, β-sitosterol, indicusin, coumarin, volatile oils, triterpines, flavonoids.[4]

The pathogenesis of acne is complex but dependent on four key factors including androgen-mediated stimulation of sebaceous gland activity, follicular hyperkeratinization, colonization of the bacterium *Propionibacterium acnes* (an anaerobic bacterium as a normal constituent of the skin microbial flora) and inflammation.[5] In Ayurvedic *samhitas* a very short description is available about the disease *Mukhadushika*. All the *samhitas* have pointed out *kapha*, *vata*, and *rakta* as the causative factor of the disease. In *Sharangadhara Samhita vakrasnigdhata* (oily face) and *pidika* have been mentioned as due to *shukradhatumala* while *Bhavaprakasa* mentioned due to *svabhav*.[6,7] The shalmali thorn like thick or hard painful eruption, impregnated with meda, found on the face of adolescent are called as *mukhadushika.*[8,9]

Sariva (*Hemidesmus indicus*) can be proven a best remedy to cure acne, due to its *Raktashodhak, Vishaghna, Rasayana, Krimighna* properties. Certain research papers has also proven that it possess anti-inflammatory, antibacterial, antioxidant and antandrogenic effects as these are important Pharmacotherapeutic agent to break the pathogenesis of acne. This paper comprises only those property of *Sariva* which treats the cause and abolish the pathogensis of *Acne vulgaris*.

MATERIAL AND METHODS

The following are the process and eligibility criteria for the inclusion of data pertaining to this review: Information extracted from various Ayurvedic treatises, text books of Ayurvedic and modern pharmaceutics, Pharmacopoeias (Ayurvedic Formulary of India, Ayurvedic Pharmacopoeia of India), available dissertations/thesis were also investigated. A search was undertaken in Google scholar, MEDSCAPE, BMC, Science Direct, MEDLINE (www.pubmed.com)/pubmed database and other relevant databases, using keywords like *Sariva*, *Hemidesmus indicus*, Acne, *Anantamul* etc.

3. Scientific Researches

The present review discusses the Anti-acne property of *Hemidesmus indicus* under the heading of preclinical and clinical research. So, here we are including only those properties of *Hemidesmus indicus* which treats the cause and abolish the pathogenesis of *Acne vulgaris*.

3.1 Antibacterial activity

Most of Anti-acne drugs target *Propionibacterium acnes*, *Staphylococcus epidermis* as they are the main culprit. In a study conducted by Kumar and co-workers, the roots of *Hemidesmus indicus* showed strong inhibitory effect on *P.acne* and *S.epidermis*. Minimum inhibitory concentration for *P.acne* and *S.epidermis* was found to be 0.051mg/ml and 1.25mg/ml.[10] Another study depicted that terpenoidal fraction obtained during successive extraction of *Hemidesmus indicus* was evaluated for Anti-acne activity. This terpenoidal fraction showed potent Anti-acne activity.[11,12]

3.2 Antioxidant activity

Methanolic extracts of *Anantamul* root bark showed free radical scavenging properties in several *in vitro* and *in vivo* models, as well as the inhibition of lipid peroxidation and scavenge hydroxyl and superoxide radicals *in vitro*.[13] The methanolic and aqueous extracts of roots *in vitro* antioxidant studies were carried out and both extracts exhibited similar scavenging effects against ABTS and superoxide radicals whereas against DPPH and nitric oxide, the methanol extract was more effective.[14] Antioxidant potential of roots methanolic extract was observed at a dose of 19.52 mg ascorbic acid/g and NO Scavenging Capacity Assay at a dose of 2.334 ± 0.145 µg/Ml methanolic extract of roots.[15,16]

3.3 Anti-inflammatory Effects

Anantamul has demonstrated anti-inflammatory activity in laboratory studies mediated by the inhibition of the transcription factor, NF-kB, reduction of pro-inflammatory IL-8 expression, and alterations in other mediators of inflammation, such as reactive oxygen species and pro-inflammatory cytokines.[17,18] A hydro-alcoholic extract of *Anantamul* at a dose level of 100 mg/kg body weight demonstrated good anti-inflammatory activity than indomethacin (a non-steroidal anti-inflammatory drug) in a carrageenan-induced hind paw rodent model.[19] In another study an herbal gel formulation containing an aqueous extract of *Rubia cordifolia* roots and *Anantamul* showed significant anti-inflammatory activity when compared to diclofenac sodium gel.[20]

4. DISCUSSION

Acne vulgaris is a largely widespread skin disorder of Pilosebaceous unit. That involve the areas containing the largest oil glands, including the face, back and trunk.[21] It is commonly characterized by formation of seborrhea, comedone, inflammatory lesions and presence of bacteria Propionibacterium acnes, Staphylococcus epidermidis and Malassezia furfur in the follicular canal and sebum production.[22] The purpose of free radicals in many ailments has been well recognized. In the recent years the vicinity which fascinated an enormous deal of consideration is antioxidants in the management of degenerative diseases in which oxidative damage has been implicated.[23] Terpenoidal fraction of *Hemidesmus indicus* (TFHI) was investigated for it's antioxidant and antiacne activities and the possible mechanism involved, based on the answer obtained in diverse in vitro models covering major free radicals viz., superoxide, hydroxyl and nitric oxide radials and antibacterial against Propionibacterium acnes and staphylococcus epidermidis which are pathogenic factors for acne vulgaris. Propionibacterium acnes and Staphylococcus epidermidis which have been recognized as pus-forming bacteria to trigger an inflammation in acne. Propionibacterium acnes have been described as an obligate anaerobic organism. It is implicated in the development of inflammatory acne by its capability to activate complements and by its ability to metabolize sebaceous triglycerides into fatty acids, which chemotactically attract neutrophils. Staphylococcus epidermidis, an aerobic organism, usually involves in superficial infections within the sebaceous unit. These factors endow with a potential objective for treatment. Propionibacterium acnes and Staphylococcus epidermidis are the target sites of anti-acne drugs.[24,25] TFHI illustrated a potent anti-acne activity. Many diterpenoids isolated from the Rabdosia plants taste bitter and exhibit various biological activities such as antitumour, antimicrobial activity. Rosthornins a terpenoid were found to exhibit moderate antibacterial activity. Terpenoids like linalool, nerolidol, geraniol, menthol, borneol, 4-terpineol, 1-octanol, α-terpineol and crinitol have proved to posses antiacne activity against Propionibacterium acnes.[26,27]

5. CONCLUSION

In present circumstances, there is an inclination of recommending combination therapy for numerous diseases including skin disease. This leads to raise the probability of drug interaction and unpleasant effects, means there is necessitate evaluating individual herbal therapy. *Sariva* (*Hemidesmus indicus*) has numerous activities to fight with this trouble and this will become a novel approach in the treatment of acne. The role of Sariva in enhancing

skin health is proven by traditional and listed activities, which ensures it to posses the antioxidant, anti-inflammatory, antistress, antimicrobial properties so that it can play an important role to cure acne and improve skin health.

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