

## MEDICINAL PLANTS USED IN ACNE VULGARIS - A CRITICAL VIEW

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### ABSTRACT

It is the general opinion that smooth and glowing skin of face not only enhances the beauty of a person but it also adds self-confidence. In Ayurvedic classics in the context of *kshudrarogas*, *Mukhadushika* is mentioned. Its signs and symptoms are similar to that of *Acne vulgaris*. *Acne vulgaris* is caused by mainly two bacterias. It is inflammatory, painful, scar forming condition. So there is need of the drugs which are antibacterial, anti-inflammatory, analgesic and antioxidant. The single drugs mentioned in the context of *Mukhadushika* has the properties of antibacterial, anti-inflammatory, analgesic and antioxidant proved by the presence of chemical constituents which are responsible for these activities.

**Keywords:** Mukhadushika, Kshudraroga, Acne vulgaris.

### INTRODUCTION

The disease *Mukhadushika* one among the *Kshudraroga*, is aptly named '*Mukhadushika*' as it results in disfigurement of physical and psychological status of an individual by manifesting itself on the most important part of the body i.e. Face (99%).

Explanation of *Mukhadushika* is analogous with description of '*Acne vulgaris*'.

Acne Affects 80% of the population in the age group 11-30 years. Mainly caused by the *Staphylococcus epidermidis* and *Propini bacterium*<sup>6</sup>.

Management of *Mukhadushika* as per Ayurveda acharya's is through *Shodhana* and *lepas*. Primarily *lepas* are indicated, if acne doesn't resolve, then *shodhana* is advised, but *vamana* is mentioned as best because of *kapha-vata pradhanatwa*.

In contemporary sciences topical therapies, antibacterials, anti-inflammatory, analgesics, antioxidants, hormones, surgery, U.V

radiations, Intra lesion injections etc are mentioned.

Here is an attempt to evaluate the anti-acne properties of drugs based on their chemical constituents.

### AETIOLOGY<sup>6,7</sup>

Four major aetiological factors are involved<sup>9</sup>

1. Increased sebum production
2. An abnormality of microbial flora
3. Hyper-keratinisation of pilosebaceous duct
4. Production of inflammation

### PATHOPHYSIOLOGY:

- Hyperkeratinisation and excess desquamation of epithelial cells from the walls of the hair follicle, leading to blockage of the follicular opening.

- Infection with *Propini bacterium* acnes. This bacteriacolonises the pilosebaceous ducts and acts on lipids to produce a number of pro-inflammatory factors.

- Blockage of the pilo-sebaceous unit.

The stimulus to hyper-cornification could possibly be androgen mediated or an irritant effect of sebaceous lipids. As hyper-cornification increases, the ductal

colonization with *Propioni bacterium acnes* and *Staphylococcus epidermidis* is seen, lipases of bacteria hydrolyse the sebaceous triglycerides to free fatty acids which may contribute to the cornification.

### TREATMENT

Mild acne - Topical therapy.

Moderate or severe acne - Oral and topical therapy.

### HERB AND CHEMICAL CONSTITUENT USEFULL IN THE TREATMENT OF ACNE VULGARIS

Herb	Chemical constituents
<i>Shalmali</i> <sup>8</sup> <i>Salmalia malabarica</i> Part Used- Thorn	Antibacterial –Shalmimin Analgesic -Mangiferin Anti - inflammatory - Luteol, Triterpene
<i>Matulunga</i> <sup>9</sup> <i>Citrus medica</i> P.U-Fruit	Antioxidant, Analgesic - Flavonoid and phenolic compounds. Anti-inflammatory - Citroflavonoids.
<i>Dhanyaka</i> <sup>10,11,12</sup> <i>Coriandrum sativum</i> P.U-Fruit, Leaf	Anti-inflammatory, Analgesic, Antibacterial – Linalool Antioxidant - Terpenoid, Phenolic compound
<i>Vacha</i> <sup>13</sup> <i>Acorus calamus</i> P.U-Rhizome	Antibacterial – Alpha and Beta-asarones Anti-inflammatory, Analgesic – Essential oil
<i>Kushta</i> <sup>14</sup> <i>Saussurea lappa</i> P.U-Rhizome	Anti-inflammatory – Cynaropicrin Antioxidant/Immunomodulatory – Costunolidedehydro costus
<i>Jaatiphala</i> <sup>15,16</sup> <i>Myristica fragrans</i> P.U-Fruit	Antibacterial - TrimyristinMyristic Antioxidant - Isoeugenol, lignans, eugenol, beta-caryophyllene Anti-inflammatory – Myristicin
<i>Lodhra</i> <sup>17</sup> <i>Symplocos racemosa</i> P.U-Bark	Anti-oxidant – Salireposide benzoyl salireposide Antibacterial- Harmine
<i>Haridra</i> <sup>18</sup> <i>Curcuma longa</i> P.U-Rhizome	Anti-oxidant, Anti-inflammatory, Analgesic – Curcumin

<i>Chandana</i> <sup>19</sup> <i>Santalum album</i> P.U-Heart wood	Antibacterial - Alpha-santalol, Di-n-octylphthalate Antioxidant – Flavonoid
<i>Sarshapa</i> <sup>20</sup> <i>Brassica campestris</i> P.U-Seed	Anti-oxidant - Phenolic compound
<i>Tuvaraka</i> <sup>21</sup> <i>Hydnocarpus wightiana</i> P.U-Fruit	Antibacterial - Hydnocarpic acid Anti-inflammatory - Hydnocarpin Antioxidant – Luteolin
<i>Naarikelapushpa</i> <sup>22,23</sup> <i>Cocos nucifera</i> P.U-Flower	Antioxidant - Phenolic compounds. Anti-microbial - 5-O-caffeoylquinic acid (chlorogenic acid), dicafeoylquinic acid
<i>Maricha</i> <sup>24,25</sup> <i>Piper nigrum</i> P.U-Fruit	Antibacterial, Anti-inflammatory Analgesic – Piperine Antioxidant - Phenolic acids, Flavonoids
<i>Arjuna</i> <sup>26</sup> <i>Terminalia arjuna</i> P.U – Bark	Antibacterial – Luteolin, Anti-inflammatory – Terminoside Antioxidant – Arjunic acid
<i>Raktachandana</i> <sup>27</sup> <i>Pterocarpus santalinus</i> P.U – Heartwood	Anti-Inflammatory, Antioxidant-Pterostilbene Anti-Bacterial-Lignans
<i>Haritaki</i> <sup>28</sup> <i>Terminalia chebula</i> P.U – Fruit	Anti-bacterial - Gallic acid,ellagic acid Antioxidant – Triethylchebulate
<i>Yashtimadhu</i> <sup>29</sup> <i>Glycyrrhiza glabra</i> P.U – Bark	Anti-Inflammatory- Glycyrrhetic acid Anti-Bacterial-Glycyrrhizin

These drugs are used in combination for external application as *lepa*.

Example<sup>1</sup>: *Lepa* prepared out of drugs like Vacha, Lodhra, Saindhava and Sarshapa or combination of Dhanyaka, Vacha, Lodhra and Kushta.

Haridra has the properties like Varnya, Shothahara and Twakdosha hara.

Jatiphala, Sarshapa, Yashtimadhu, Haritaki are Krimighna.

Yashtimadhu is Varnya<sup>31</sup>.

## DISCUSSION

1. Bacteria are one of the cause, so antibacterial drugs are needed to control the problem.

2. Inflammation and pain are the universal symptoms of Acne, so Anti-inflammatory and analgesics are drugs of choice in treatment.

3. For healing and recovery of tissues, antioxidants are essential.

4. Essential oils improve the peripheral circulation. Improved peripheral circulation helps in healing.

5. Terpenoids, Phenols, alkaloids, and flavonoids are compounds whose hydrophobicity induces partition in the lipids of the bacterial cell membrane and mitochondria, disturbing the structures and rendering them more permeable<sup>30</sup>.

6. Many single drugs coated in classics. Few of them had been already proved by evidence based researches like Shalmali, Badara etc.

### **CONCLUSION**

1. Anti-acne drugs mentioned in classics has the properties like anti-inflammatory, anti-bacterial, antioxidant and analgesic. That is why they are very effective in practice.

2. While dealing with the management of *Mukhadushika*. *Acharyas* have not only focused on treating acne but also on reinstating the natural texture and complexion of skin.

3. All the plants coated above have been proved as good as anti-come dogenic agents.

4. These plants are safe, economical, freely available, simple plants can be successfully utilized.

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