

ANTI-ACNE ACTIVITY ON SPIKES OF ALOE

Parameshwar H*, Ramachander T, Kiran T and Rajkumar

Department of Pharmacognosy, Mother Teresa college of Pharmacy,
NFC nager, Ghatkesar, Hyderabad - -501301, Telangana, India.

ABSTRACT

Acne vulgaris is one of the dermatological disorders, mainly affect to adolescents and any age groups. It is multifactorial chronic inflammatory disease of pilosebaceous¹. It is characterized by different areas of scaly red skin (seborrhea), pinheads (papules), blackheads and whiteheads (comedones), large papules (nodules), and sometimes scarring (pimples). Severe acne is usually inflammatory and non-inflammatory. Acne has main pathogenetic mechanism—increased sebum productions, follicular hyper keratinization. In recent years, due to better understanding of the pathogenesis of acne, new therapeutic modalities are designed. Availability of new medicinal plants for the treatment options to complement the existing armamentarium should help to achieve the successful therapy of greater numbers of acne patients, ensure improved tolerability and fulfill patient expectations. Successful management of acne needs careful selection of anti-acne agents according to clinical presentation and individual patient needs. Medicinal plants have a long history of use; and have been shown to possess low side effects, such as the protective effects for example; *Curcuma longa*, *Syzygium cuminum*, *Ocimum gratissimum*, *artichoke*, *Calendula officinalis* and *Triticum aestivum*, *Hamamelis virginiana* *Quercus tinctorium*, *latifolium*, *Alchemilla mollis*, *Lavandula angustifolia*, *Verbascum thapsus*, *Krameria triandra*, *Rheum palmatum*, *Hypericum perforatum* and *Rumex crispus* *Bellis perennis*, *Viola tricolor*, *Elymus repens* and *Taraxacum officinale*. (*Equisetum* species), yellow milk of *Aloe ferox* fresh leaves *Vitex agnus-castus* (*Glycyrrhiza glabra*) *Usnea barbata*, *Solanum dulcamara* and edible use of *Saccharomyces cerevisiae*, *Lemna minor* *Cynara scolymus*, *Matricaria recutita* oleoresin of an Indian *Commiphora mukul*, medicinal plants might be considered as reliable sources for development of new drugs. The purpose of this article is to review the treatment options available with us in the present scenario.

Keywords: Acne vulgaris, peel of Aloe spike.

INTRODUCTION

Herbal medicines are gaining increased popularity due to their advantages, such as better patient tolerance, long history of use, fewer side-effects and being relatively less expensive. Furthermore, they have provided good evidence for the treatment of a wide variety of difficult to cure diseases. More importantly, other than consumption as preventive or treatment remedy, to reduce their side effects. Many medicinal plants with anti-inflammation and antibacterial activities are used in different ways in the treatment of acne and other infective diseases.

TOPICAL THERAPY: Benzyl peroxide, Topical retinoids. Topical antibiotics other topical/new agents, Salicylic acid, Azelaic acid, Lactic acid/Lactate lotion, Picolinic acid gel, Dapsone gel.

SYSTEMIC THERAPY

Oral antibiotics:

Tetracyclines first choice (500-1000mg/day, Co-trimoxazole, and trimethoprim (500mg), azithromycin (500 mg/ 3 times in a weekly) minocycline tablet (1 mg/kg/day),⁴

The agents should not be used in acne due to lack of efficacy and safety consideration such as cephalosporins, sulphonamide, and gyrase inhibitors⁵

Long-term therapy with oral antibiotic not only threat to resistant of *P. acne*, but also to coagulase negative staphylococci on the skin, *Staphylococcus aureus* in the nares, and streptococci in the oral cavity.^{6,7} There is a significant association between antibiotic used in acne⁸

Hormonal therapy

It may be needed in female patients with severe seborrhoea, clinically apparent androgenetic alopecia, seborrhoea/acne/hirsutism/alopecia

(SAHA) syndrome, late-onset acne (acne tarda), and with proven ovarian or adrenal hyperandrogenism.

Oral contraceptives: Norgestimate with ethinyl estradiol, and norethindrone acetate with ethinyl estradiol, Spironolactone, Cyproterone acetate, Flutamide Oral isotretinoin

Physical treatment: Lesion removal, Comedones, Active deep inflammatory lesions removal.^{5,10}

Phototherapy

a) Visible light: *In vitro* and *in vivo* exposure of acne bacteria to 405–420 nm of ultraviolet free *blue light* results in the photo-destruction through the effect on the porphyrin produced naturally by *P. acne*.¹¹ Use of limited spectrum wavelength, such as blue light (peak at 415 nm), and mixed blue and red light (peak at 415 and 660 nm) have been found to be effective in reducing acne lesions after 4–12 weeks.^{12,13}

b) Photodynamic therapy

(with addition of δ -aminolevulinic acid) and pulsed dye laser (585 nm) were also effective in acne, but further trials are needed to confirm the same.^{14,15}

DIET

Dietary restriction has not been demonstrated to be benefit in the treatment of acne. The benefit of dietary management in the treatment of acne has been neither demonstrated nor disproved.¹⁷

CONCLUSION

The various combinations of herbal extracts and topical, systemic drugs are available to treat acne, which may sometimes confuse the treating dermatologist.

Topical retinoid

- It should be primary treatment for most forms of acne vulgaris.
- To be applied to entire affected area.
- Antimicrobial to be added for inflammatory lesions.
- Essential part of maintenance therapy.

Combination therapy

- benzoyl peroxide plus an antibiotic.
- Topical retinoid can be continued to prevent remission.

Antibiotics

- Doxycycline and minocyclines are more effective than tetracycline.
- Do not use chemically dissimilar oral and topical antibiotic together.

Hormonal therapy

It is an excellent choice in women requiring oral contraceptive (estrogen containing), Oral antiandrogen like spironolactone and cyproterone acetate can be useful in the treatment of acne.

Herbal Combinations:

The antibacterial properties of Aloe spikes, Tulsi leaves extract, Neem bark extract and Honey are very effective in treating acne and reducing the redness caused by it. It prevents bacteria from infecting acne wounds and accelerates the process of healing. Its antifungal properties are useful in treating inflammation like boils and cysts on the skin. The combination has shown dramatic results in helping improve pigmentation. Take the combined extract of spikes extract, tulsi extracts Neem bark extract, honey and add to it some freshly grated cucumber, lemon juice and 1tsp of sandalwood powder. Apply this on the skin and let it dry completely. Wash off with ice cold water and pat dry. A Aloe spikes extract acts as a good moisturizer for those who have oily, acne-prone skin, that can help scars heal faster by strengthening the collagen structure within the scar. It should not be used on open wounds, but on healing wounds, it can hasten healing and lessen scar formation.

The extracts of Aloe spikes, Tulsi leaves, Neem barks and Honey combinations very effectively shown the results on Acne scares.

REFERENCES

1. Leyden JJ. New understanding of the pathogenesis of acne. *J Am Acad Dermatol.* 1995;32:515–25.
2. Yang DJ, Quan LT, Hsu S. Topical antibacterial agents. In: Wolverton SE, editor. *comprehensive dermatologic drug therapy.* 2nd ed. Philadelphia: Saunders Elsevier; 2007. pp. 525–46.
3. Mernadier J, Alirezai M. Systemic antibiotics for acne. *Dermatology.* 1998;196:135–9.
4. Plewig G, Kligman AM. *Acne and Rosacea.* 3rd ed. New York: Springer-Verlag; 2000.

5. Espersen F. Resistance to antibiotics used in dermatological practice. *Br J Dermatol.* 1998;139:4–8.
6. Eady EA, Jones CE, Tipper JL, Cove JH, Cunliffe WJ, Layton AM. Antibiotic resistant propionibacterium in acne: Need for policies to modify antibiotic usage. *Br Med J.* 1993;306:555–6.
7. Plewig G, Kligman AM. *Acne and Rosacea.* 3rd ed. New York: Springer-Verlag; 2000
8. Margolis DJ, Bowe WP, Hoffstad O, Berlin JA. Antibiotic treatment of acne may be associated with upper respiratory tract infection. *Arch Dermatol.* 2005;141:1132–6
9. Levine RM, Rasmussen JE. Intralesional corticosteroids in the treatment of nodulo-cystic acne. *Arch Dermatol.* 1983;119:480–1.
10. Papageorgiou P, Katsambas A, Chu A. Phototherapy with blue (415 nm) and red (660nm) light in the treatment of acne vulgaris. *Br J Dermatol.* 2000;142:973–8.
11. Cunliffe WJ, Goulden V. Phototherapy and acne vulgaris. *Br J Dermatol.* 2000;142:855–6.
12. Itoh Y, Ninomiya Y, Tajima S, Ishibashi A. Photodynamic therapy of acne vulgaris with topical delta-aminolaevulinic acid and incoherent light in Japanese patients. *Br J Dermatol.* 2001;144:575–9.
13. Gold MH. Acne vulgaris: Lasers, light sources and photodynamic therapy- an update 2007. *Expert Rev Anti Infect Ther.* 2007;5:1059–69.
14. Bett DG, Morland J, Yudkin T. Sugar consumption in acne vulgaris and seborrhoeic dermatitis. *Br Med J.* 1967;3:153–5.
15. Fulton JE, Jr, Plewig G, Kligman AM. Effects of chocolate on acne vulgaris. *JAMA.* 1969;210:2071–4.
16. Smith RN, Mann NJ, Braue A, Mäkeläinen H, Varigos GA. The effect of a high-protein, low glycemic-load diet versus a conventional, high glycemic-load diet on biochemical parameters associated with acne vulgaris: A randomized, investigator marked, controlled trial. *J Am Acad Dermatol.* 2007;57:247–56.
17. Logan AC. Dietary fat, fibre, and acne vulgaris. *J Am Acad Dermatol.* 2007;57:1092–3.