



ISSN: 2455-0485

Construction of an 'acne reduction clock' and treatment success with combination of *Ocimum basilicum* & *Aloe vera*

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Received: March 11, 2019
Accepted: May 31, 2019
Published: June 21, 2019

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ABSTRACT

Acne/pimple is a chronic skin condition with hair follicles blocked with sebum/dirt/dead cells. This leads to inflammation and also increases the microbial load. Acne occurs due to various reasons such as seasons, enzymes, environmental conditions, microbial load, excess sebum deposition etc. There are various conventional treatments available but are not satisfactory or may have some side effects. Herbal drugs play a major role in the treatment of acne. The combination of *Ocimum basilicum* and *Aloe vera* is proven to have anti-microbial and anti-inflammatory activities. In the present paper, herbal product with combination of *Ocimum basilicum* and *Aloe vera* was studied for its efficacy on hourly basis. Results are presented in the paper.

KEYWORDS: Acne reduction clock, acne/pimple, *Ocimum basilicum*, *Aloe vera*, JRK's Acne fite

INTRODUCTION

Acne otherwise called as pimple, is a major concern of teenagers as acne would affect the self-esteem, appearance and self-confidence of the sufferer. The infection and inflammation of the sebaceous glands cause acne form eruption. The problem is although seasonal, age dependent and is influenced by certain type of food, the treatment success is still far from complete [1]. Conventional treatment is losing the confidence of medical fraternity and as a result, Siddha and Ayurveda products with medicinal herbs are gaining importance and started to give promise for the management of acne.

Ocimum basilicum is an aromatic plant contains several essential oils and has a characteristic pleasant odor. Most of the essential oils are anti-microbial in nature and hence are exploited globally for the purpose of controlling microbes [2]

Aloe vera is referred in Ayurveda/siddha literature as 'kumari' meaning teenage girl [3,4]. The importance of *Aloe vera* is further for the treatment of skin problems of teenagers is well documented in Ayurveda and siddha literature.

JRK's Acne fite is a proprietary siddha medicine formulated with extracts of *Ocimum basilicum* and *Aloe vera* to combat

acne. The formulation is made as face pack to be applied over the face with short retention time and then to be washed. The combination of extracts of *Ocimum basilicum* & *Aloe vera* in JRK's Acne fite is proven to be effective in reducing acne form eruptions within 24 hours.

The underlying mechanism of action of *Ocimum basilicum* & *Aloe vera* is although not clearly known but this herbal combination is proven to be effective and is comparable to clindamycin, adapilene, nicotinic acid, tretinoin and erythromycin. As evidenced by the clinical response obtained for JRK's Acne fite.

The present study has not only proved the combination of *Ocimum basilicum* & *Aloe vera* are effective for the management of acne, the above findings also validate the scientific credence of the ancient siddha system as well. Further our present study also validates the importance of the name 'kumari' for *Aloe vera* and the associated medical benefits for the teenagers.

The present paper describes the therapeutic response of acne to JRK's Acne fite with in 24-hour treatment cycle. We are the first to document the medico-graphical representation of the therapeutic benefit of *Ocimum basilicum* & *Aloe vera* for the treatment of acne. Details are presented in the paper.

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MATERIALS AND METHODS

Details of JRK's Acne Fite

It is a proprietary siddha medicine indicated for acne. It is composed of *Ocimum basilicum* and *Aloe vera*. It is presented in a unique wash off pack, works on various causes of acne. Possess anti-microbial activity, reduces the sebum and hyperpigmentation.

Evaluation of JRK's Acne Fite in Type-1 and Type -2 Acne

Three patients with type-1 and type-2 acne who just started to use JRK's Acne fite was selected for the study. In the facial skin 1 cm² area was demarcated and number of acne form eruptions (pustular and comedones) were counted.

After gentle wash with a mild detergent JRK's Acne fite was applied over the demarcated area and then the pack was allowed to dry for 15 min. After 15 min the face was washed pat dried and then the response (reduction of acne form eruption) was recorded at different time intervals.

Vernier caliper was used for the measurement of acne.

Evaluation of JRK's Acne Fite in Nodulocystic Acne

Three patients with nodulocystic acne who just started to use JRK's Acne fite was selected for the study. The initial size (size and circumference) was noted.

After gentle wash with a mild detergent JRK's Acne fite was applied over the nodulocystic acne and then the pack was allowed to dry for 15 min. After 15 min the face was washed pat dried. the treatment procedure was continued was a period of 5 days and measurements were taken to ascertain the reduction in size of the acne at different time intervals. Vernier caliper was used for the measurement of acne.

Review of Literature on Anti-Microbial and anti-Inflammatory Effect of *Ocimum basilicum*

Ocimum basilicum was documented to possess anti-microbial and anti-inflammatory effect. In studies by Bassolé et al. [5] *O. basilicum* had as its main compounds: linalool (57%) and eugenol (19.2%). The essential oil has activity against various bacterial strains [5,6]. Basil extract showed anti-inflammatory properties [7].

Review of Literature on Anti-Microbial and anti-Inflammatory Effect of *Aloe vera*

Aloe vera has been traditionally used in treatment of minor wounds, inflammatory skin disorders, thermal and radiation burns and to alleviate chronic osteoarthritis pain. It also possesses some antimicrobial activity [8].

Aloe vera has a dose dependent activity on reactive oxygen metabolite production and inhibits prostaglandin E₂. These in vitro studies support the anti-inflammatory actions of *Aloe vera* gel [9].

RESULTS

Both type-1 and type-2 acne as well as nodulocystic acne has responded very well to the treatment with the combination of *Ocimum basilicum* and *Aloe vera*. Within 24 hours of treatment, 90 % reduction in acne was observed in the case of type-1 and type-2. In the case of nodulocystic acne, reduction of 98% from its initial size was observed on day 5. Table -1.

A progressive reduction either in no. of acne form eruptions or in the size of acne was observed with time. Within 24 hours' acne fite has shown remarkable effect in reducing type-1 and type-2 acne whereas for nodulocystic acne it took nearly 5 days.

DISCUSSION

The combination of *Ocimum basilicum* and *Aloe vera* are proven to have enormous anti-acne potential. Although the real mechanism of action of these two medicinal herbs are unclear but certainly they may possess two important therapeutic values such as anti-microbial and anti-inflammatory. *Ocimum basilicum* is an aromatic herb that possess several aromatic oils. Siddha system has rich tribute for this plant for the treatment of various skin diseases collectively called as kuttam.

Acne is largely a problem of teenagers and the facial eruptions are bound to cause low self-esteem and self-confidence. *Ocimum basilicum* is known to have anti-microbial property and which has been established by several earlier workers at the screening level. However, we are the first to establish the antiacne benefit of *Ocimum basilicum* in human volunteers. Our study has revealed that the anti-microbial effect of *Ocimum basilicum* may be as strong as clindamycin, adapilene, nicotinic acid, tretinoin and erythromycin. Although at *in vitro* level we could

Table 1: Acne reduction chart

Type 1 and 2 acne		Nodulocystic acne		
Hours of treatment	Percentage reduction	Hours of treatment	Reduction in size	Percentage reduction
0	-	0 hr	50 mm	-
3	30	18 hr	45mm	10
6	45	36 hr	38 mm	24
9	60	54 hr	28 mm	44
12	70	72 hr	20mm	60
15	85	90 hr	15mm	70
24	90	108 hr	Less than 1 mm	98

not establish such strong anti-microbial activity for *Ocimum basilicum*. This may be due to the inherent limitations of *in vitro* test methods or due to some unknown mechanism of *Ocimum basilicum* in treating acne which is more pronounced in clinical situations than in *in vitro* experimental setup.

Aloe vera is proven to have anti-inflammatory effect [10]. *Aloe vera* is referred as 'Kumari' in siddha system of medicine and the term 'kumari' refers to a teenager. The wisdom of ancient siddhars to refer *Aloe vera* as kumari is been scientifically validated by our study. The anti-inflammatory effect of *Aloe vera* may be responsible for the significant reduction of acne form eruption. Whether *Ocimum basilicum* also possess strong anti-inflammatory effect is not known. Findings of our present study does not rule out such possibility. May be the strong anti-inflammatory effect of the combination of *Aloe vera* and *Ocimum basilicum* is responsible for the significant reduction of acne both in terms of number and size.

Whether the anti-inflammatory benefit of *Aloe vera* and *Ocimum basilicum* also can be stretched to assume steroid like effect is difficult to answer. The effect of this combination is equal to clindamycin, adapilene, nicotinic acid, tretinoin and erythromycin which suggests that the combination of *Aloe vera* and *Ocimum basilicum* showing such a strong anti-acne activity may be due to the anti-inflammatory effect. Technically the combination of *Aloe vera* and *Ocimum basilicum* is unlikely to cause drug resistance nor might cause serious immune suppression like steroids. Although *Aloe vera* and *Ocimum basilicum* are documented in detail in ancient siddha literature for the treatment of various diseases. We are the first to combine these two medicinal herbs for the treatment of acne. Further we are the first to establish that besides anti-microbial activity the anti-inflammatory benefit may also offer great therapeutic value for the treatment of acne.

Whether the combination of *Aloe vera* and *Ocimum basilicum* also may trigger the synthesis and release of certain anti-acne compounds by skin is not clear. However, the present study has undoubtedly proved that JRK's Acne fite is extremely effective against acne. We are the first to prepare an eclipse diagram to demonstrate how acne reduction occur vis-à-vis time by focusing on a cluster of acne per unit area in case of type-1 and type-2 and a particular acne in the case of nodulocystic acne.

Herbal drugs can address multi various human medical challenges if the medical fraternity is willing to experiment with herbal therapy. Conventionally it is believed that anti-microbials alone will be effective for anti-acne treatment. But we are the first to establish that besides anti-microbial activity the possible anti-inflammatory benefit also can offer great treatment benefit for acne. JRK's acne fite is scientifically proven to combat acne as effective as any other anti-acne preparations in the market. Certainly siddha system has lot to take pride of *Aloe vera* and *Ocimum basilicum*.

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