

Original Research Article

## Clinical Study of the Effectiveness of Prepared Formula for the Acne Vulgaris

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### ABSTRACT

Acne Vulgaris is popularly known as pimples that is a skin condition the most teenagers involving predominant the face. According to Ayurveda view, Acne Vulgaris is known as *YuwanaPidaka* and *Mukhaduṣika*. *VitadedVāta*, *Kaphadōsas* and *RaktaDhātu* are caused for *YuwanaPidaka*. The formula that mention in *CikitsaSthāna* of *SusrutaSamhitha* was selected. Its ingredients are *Coriandrumsativum* Linn., *Acoruscalamus* Linn., *Symplocos cochinchinensis* (Lour.) Moore. And *Saussurealappa* C.B. Clarke. Patients of either gender in the age group of 12-30 years were enrolled in the trial. Patients below 12 years and above 30 years, patients with any systemic illness such as diabetes mellitus, patients with other variants of acne like acne fulminans, acne rosacea, acne necrotica and patients suffering from other concomitant diseases like vitiligo, dermatophytosis, psoriasis and eczema were excluded from the study. Similarly, patients who had taken any local or systemic treatment for their disease in the past one month prior to the trial were also excluded. All the patients were advised to apply the 10-15 grams of *drug* on the affected area once at night and then wash the area with lukewarm water in the morning. The total duration of treatment was 30 days. After applying the paste was observed of inflammatory papules, pustules, white heads, black heads and scar formation. The severity of Acne and efficacy of treatment was assessed by using photography. Recorded their changes in symptoms and results which gathered were arranged in reputed procedure. Finally; results were analyzed by using Minitab statistical software. According to the result of data analysis can be concluded selected formula has efficacy on Acne Vulgaris.

**Key words:** Pimples, *YuwanaPidaka*, Inflammatory papules.

### INTRODUCTION

Yuwana Pidaka (Acne) by the name also it emphasize that it is a disease onset during the period of young age. A clear complexion might have created a stronger self-image and a higher sense of self confidence. Unfortunately, acne hits young people at a time when they most want to look their best. Acne can make them feel embarrassed and feel bad about themselves.

Acne which manifests itself predominantly during adolescence and sometimes during adulthood is that notorious phenomenon that can turn the face into a disaster zone. It is a common skin disease that affects 60-70% of Americans at some time during their lives. 20% percent will have severe acne, which results in permanent physical and mental scarring having a negative impact on social life, employment and self-esteem. <sup>(1)</sup>

It's the pimple that pops out of before an important interview, a few days before menstruation or when puberty knocks at the door. The skin, as well as the body, must be in good health not only to look good but to protect itself from infection. (2) Acne thrives on an imbalanced skin. Healthy skin has a pH of about 5.5, which is acid. Acne develops when the skin tends to be more alkaline. In comparison, water, which is alkaline, has a pH of 7. Considering these facts it was predicted that study of the psychological role in the onset as well as in the prevention and management of Acne (YuwanaPidaka) is very important. (3)

### Causes of YuwanaPidaka

The direct references from Ayurveda texts were not found in relation with psychological or spiritual factors involved in the manifestation of the YuwanaPidaka. But under the Kuṣhtharoga (skin diseases) emphasized that due to various acts on sins (e.g. killing of brahmana, women and pious persons, robbing the wealth of others) are the causes of skin diseases born of sin, and also it emphasized that some of the skin diseases are genetically involved and some are spread from person to person. (4) 'Kama' (excessive thinking about sex) may increase the secretion of hormones from adrenal gland and then these hormones increased the sebum secretion (vitiates and aggravates Medodhatu) and give rise to acne. Other psychological factors such as grief, anger or psychic trauma (especially in girls) may lead to imbalance in Dosha and flare up condition of 'Mukhaduṣika'. (5)

While considering the modern medical literature there were various causes

of acne including genetic, hormonal, sebaceous activity, bacteria, climate, chemical and psychological. (6,7) Stress is a psychological factor that makes sebaceous gland hyperactive and may cause acne. Scientific research indicates that "increased acne severity" is "significantly associated with increased stress levels". (8) The National Institute of Health (USA) lists the stress as a factor that can cause an acne flare. (9)

### Symptoms of YuwanaPidaka

Papules, resembling the sprouts on the bark of Salmali tree (Bombaxmalabarium) appearing on the face of adolescents caused by increase of Kapha, Vata and Rakta together is known as YuwanaPidaka which makes the face ugly. (10) By the aggravation of Kapha, Vata and Shonita, Pidaka resembling thorns of Salmali tree, appear on the face of youths; this is known as Mukhaduṣika. (11)

The mainstay for the treatment of Acne is use of topical or systemic antibiotics and retinoid. But the long term use of these drugs produce significant side effects like erythema, peeling, burning, and drying of the skin. Therefore it is very important to develop herbal therapeutic modalities for the treatment of Acne. According to that the formulation was selected from the *ChikitsaSthana* of *SusrutaSaṃhitha*. Its ingredients are *Coriandrum sativum* Linn., *Acorus calamus* Linn., *Symplocos cochinchinensis* (Lour.) Moore and *Saussurea lappa* C.B. Clarke. (12-15)

PancaPadārtha of these ingredients according to the Ayurveda texts are mentioned in below.

Ingredients	Rasa	Guna	Virya	Vipaka	Karma
<i>Coriandrum sativum</i> Linn.	Madhura, Katu, Tikta, Kaṣāya	Laghu, Snigdha	Uṣṇa	Madhura	Tridosha Śamaka
<i>Acorus calamus</i> Linn.	Katu, Tikta	Deepana, Pācana	Uṣṇa	Katu	Kapha - Vata Śamaka
<i>Symplocos cochinchinensis</i> (Lour.) Moore.	Kaṣāya	Laghu, Rūkṣa	Śita	Katu	Tridosha and Rakta Śamaka
<i>Saussurea lappa</i> C.B. Clarke.	Katu, Tikta, Madhura	Laghu	Uṣṇa	Katuka	Kapha Vata and Rakta Śamaka

The purpose of this study was aimed to study efficacy of selected formula on the

features of Acne Vulgaris in the young age population.

## MATERIALS AND METHODS

The present study was an open, pre and post evaluation, non-randomized trial conducted at the out-patient departments of Gampaha Wickramarachchi Ayurveda (Teaching) Hospital and Gampaha Wickramarachchi Ayurveda Institute, University of Kelaniya.

Patients of either gender in the age group of 12-30 years were enrolled in the trial. Patients below 12 years and above 30 years, patients with any systemic illness such as diabetes mellitus, patients with other variants of acne like acne fulminans, acne rosacea, acne necrotica and patients suffering from other concomitant diseases like vitiligo, dermatophytosis, psoriasis and eczema were excluded from the study. Similarly, patients who had taken any local or systemic treatment for their disease in the past one month prior to the trial were also excluded. Routine investigations like complete haemogram, urine and stool examination, Random blood sugar, Liver Function Test and Renal Function Test were done before treatment in order to exclude the other systemic ailments.

Used five features of AV to study efficacy of the formulation. Those were inflammatory papules, pustules, white heads, black heads and scar formation. As including about 30 patients for each feature, randomly patients who were suffer for AV were selected for the study. When categorization patients for features of AV some patients were belonged more than one feature. All the patients were advised to apply the 10-15 grams of *drug* on the affected area once at night and then wash the area with lukewarm water in the morning. The total duration of treatment was 30 days. The *drug* was supplied in an individual pack for each patient and their compliance was checked after completion of treatment. No additional medication was allowed.

After applying the paste was observed of inflammatory papules, pustules, white heads, black heads and scar formation. The severity of acne and efficacy

of treatment was assessed by using photography. Recorded their changes in symptoms and results which gathered were arranged in reputed procedure. The pre- and post-treatment scores were statistically analyzed by using Wilcoxon signed rank test and the level of significant difference was chosen as  $P < 0.05$ .

### Criteria for Assessment

Stages of each feature of AV were classified by using a specially prepared grading scale as follows.

Grade	Classification / Stage	Score
Nil	Cure	0
1-8	Mild	1
9-16	Moderate	2
17-24	Severe	3
More than 25	Very Severe	4

## RESULTS

### 1. Inflammatory papules:

Table - 1

Assessed mark (Grading)	0	1	2	3	4
No. of patients at beginning	10	8	4	4	4
No. of patients after 2 <sup>nd</sup> week	4	2	12	8	4
No. of patients after 4 <sup>th</sup> week	0	0	0	4	26

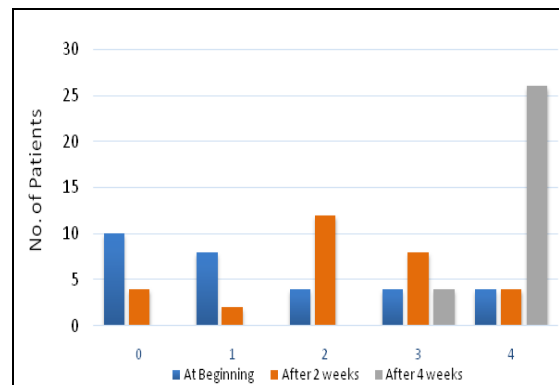


Figure - 1

### 2. Pustules:

Table - 2

Assessed mark (Grading)	0	1	2	3	4
No. of patients at beginning	0	8	12	10	0
No. of patients after 2 <sup>nd</sup> week	0	0	2	14	14
No. of patients after 4 <sup>th</sup> week	0	0	0	0	30

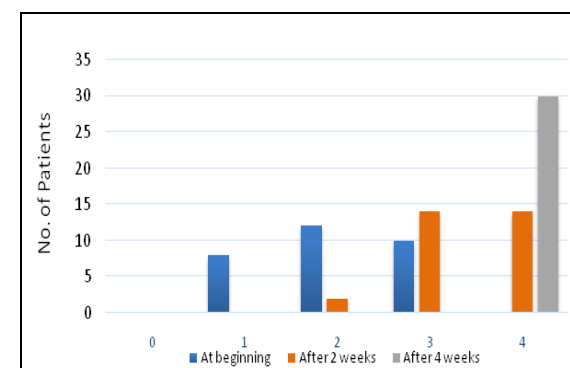


Figure - 2

### 3. White heads:

Table - 3

Assessed mark (Grading)	0	1	2	3	4
No. of patients at beginning	6	6	10	8	0
No. of patients after 2 <sup>nd</sup> week	0	0	6	20	4
No. of patients after 4 <sup>th</sup> week	0	0	0	6	24

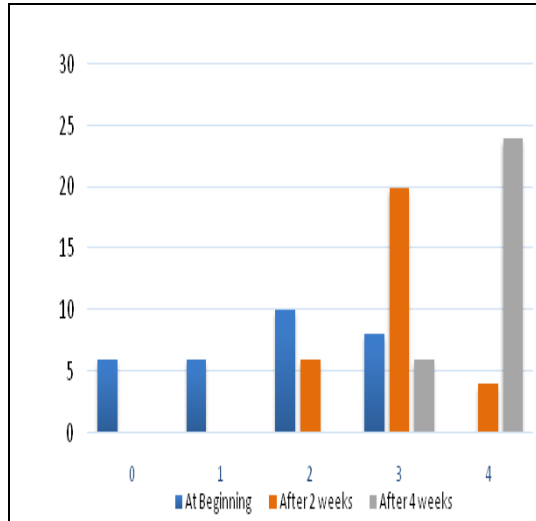


Figure- 3

### 4. Black heads:

Table - 4

Assessed mark (Grading)	0	1	2	3	4
No. of patients at beginning	0	8	12	10	0
No. of patients after 2 <sup>nd</sup> week	0	4	4	14	8
No. of patients after 4 <sup>th</sup> week	0	9	4	8	9

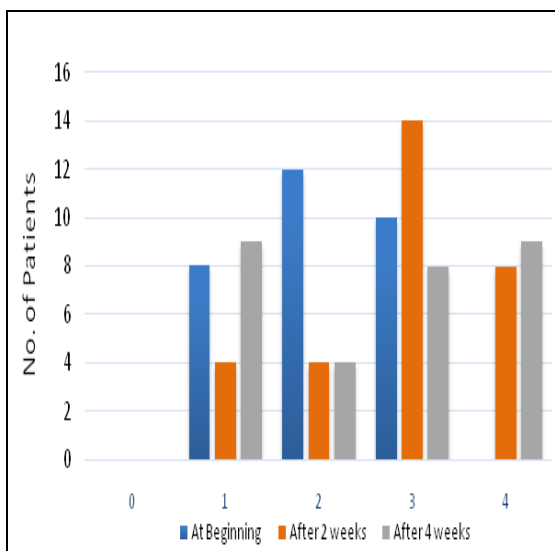


Figure - 4

### 5. Scarring:

Table - 5

Assessed mark (Grading)	0	1	2	3	4
No. of patients at beginning	0	8	10	6	6
No. of patients after 2 <sup>nd</sup> week	0	4	8	12	6
No. of patients after 4 <sup>th</sup> week	0	0	8	12	10

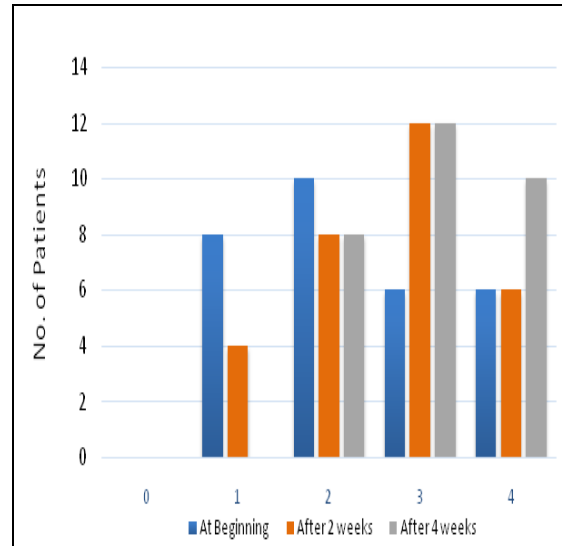


Figure - 5

### Statistical Analysis

Features	After 2 weeks		After 4 weeks	
	T value	P value	T value	P value
1. Inflammatory papules	-5.53	0.000	-21.11	0.000
2. Pustules	-4.12	0.000	-13.03	0.000
3. White heads	-3.53	0.001	-10.05	0.000
4. Black heads	-5.53	0.000	-12.04	0.000
5. Scarring	-4.01	0.000	-8.12	0.000

### DISCUSSION

YuwanaPidaka (Acne vulgaris) is a common skin disorder which affects one's beauty as well as personality. Yuwana Pidaka is occurred by vitiation of Kapha Dosha, Vata Dosha and Rakta Dhatu. (16) Ingredients of selected paste possess properties pacifying vitiated Kapha Dosha, Vata Dosha and Pitta Dosha (Raktadhatu). They also have Madhura Rasa which pacifies vitiated Vata Dosha and Pitta Dosha; Kashaya Rasa, Tikta Rasa and Katu Rasa that pacify vitiated Kapha Dosha; SnigdhaGuna pacify vitiated Vata Dosha; LaghuGuna and Ruksha Guna pacify vitiated KaphaDosha; UshnaVirya pacifies vitiated KaphaDosha; ŚitaVirya pacifies vitiated Vata Dosha and Pitta Dosha; Madhura Vipaka pacifies vitiated VataDosha and Pitta Dosha; Katu Vipaka pacifies vitiated Kapha Dosha; Because of these properties, paste of Selected formula is beneficial in treatment of Yuwana Pidaka (Acne vulgaris), a disease occurred by vitiation of KaphaDosha and VataDosha. In the present study, patients suffering from

YuwanaPidaka are between 15-28 years of age. Among this age group Pitta Dosha and KaphaDosha are the prominent Dosha in the body. As the selected formula possesses properties of pacifying vitiated VataDosha, KaphaDosha and Pitta Dosha, it is able to placate diseases originating predominantly due to vitiation of Pitta Dosha and KaphaDosha. *Coriandrumsativum* Linn. And *Acoruscalamus* Linn. Have the properties of Kṛmighna (Anti - microbial action) and Āmapācana. *Symplocos cochinchinensis* (Lour.) Moore. And *Acoruscalamus*Linn have the property of Śophaghna (Anti - inflammatory). *Saussurealappa* C.B. Clarke. Has the property of Kāntikara or Varṇya (Promote complexion or fairness).<sup>(12-15)</sup> Due to these properties, selected formula subdues the disease YuwanaPidaka.

## CONCLUSION

All the P values were statistically highly significant (P<0.001). Therefore treatment is highly effective according to the data analysis. It could be concluded that paste of selected formula is beneficial in treatment of Yuwana Pidaka (Acne vulgaris) as it completely or partially relieved the symptoms of Yuwana Pidaka.

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