

## EFFICACY OF *JALUKAVACHARANA* IN THE MANAGEMENT OF *YUVANAPIDAKA* W.S.R. TO ACNE VULGARIS- A PILOT STUDY

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### ABSTRACT

According to *Ayurveda*, among the 56 *Upangas* face is at the top, so everyone and mostly youngsters are most cautious and careful about the beauty of face. Face is index of mind and mirror of the body. Unfortunately, skin of the face is affected by certain anomalies in adolescence age which is the golden period of life. Acne Vulgaris is a chronic inflammatory disease of the pilo-sebaceous follicles characterized by comedones, papules, pustules and often scars, chiefly on cheeks, chin, nose, forehead and upper trunk. As per *Ayurveda* classics this condition can be correlated with *Yuvanapidaka* which is the result of vitiated *Kapha*, *Vata* and *Shonita*. Hence the present study was conducted to observe the efficacy of *Jalukavacharana* in the management of *Yuvanapidaka*. The diagnostic parameters were assessed on the basis of *Ayurveda* as well as modern aspects like *Pidaka* on face including *Medogarbhata*, *Ruja*, *Daha*, *Srava* etc. A special proforma was prepared and patients were examined on the basis of available sign and symptoms. Patients were treated according to principles of *Yuvanapidaka Chikitsa* with *Jalukavacharana*. Remarkable results were observed in the form of improvement in the chief complaints of the patient.

**Keywords:** *Yuvanapidaka*, Acne vulgaris, *Jalukavacharana*

### INTRODUCTION

Beauty is a matter for joy forever. Everybody wants to remain not only healthy but beautiful too. Face is index of mind and mirror of the body, it is considered among the top while thinking about look and beauty. According to *Ayurveda*, among the 56 *Upangas* [parts] face is at the top so everyone and mostly youngsters are most cautious and careful about the beauty of face. Unfortunately skin of the face is affected by certain anomaly in adolescence age which is the golden period of life. Acne is the scourge of mankind and

the travesty of youth. Acne Vulgaris is a chronic inflammatory disease of the pilo-sebaceous follicles characterized by comedones, papules, pustules and often scars, chiefly on cheeks, chin, nose, forehead and upper trunk. Acne tends to appear earlier in females, due to later onset of puberty in males. According to the Global Burden of disease (GBD) study, acne vulgaris affects 85% of young adults aged 12-25 years. Acne consistently represents the top three most prevalent skin conditions in the general population, as found in large studies

within the UK, France, and the USA. The production of androgens during puberty explains in part, why acne vulgaris is so prevalent in this population.<sup>1</sup> Yuvanapidaka [acne vulgaris] is described in *Kshudraro-ga* [minor skin diseases].<sup>2</sup> Due to aggravation of *Kapha* [phlegm], *Vata* [air] and *Shonita* [blood], *Pidaka* [papules] resembling the sprouts on the bark of *Shalmali* tree (*Salmaliamalabarica*) appearing on the face of adolescents is known as *Yuvanapidaka*, which make the face ugly.<sup>3</sup> Modern medications for acne include topical therapies; antimicrobials, hormones, surgery, U-V Irradiations; Intra lesions injections etc. But those have their own limitations. All these modern treatment modalities burn a hole in the pocket without curing the disease and are only effective until used, with a very high rate of relapse on leaving medicine. Looking into the above mentioned facts there is a need for a treatment which can treat effectively as well as reduces the recurrence of acne vulgairs. *Panchakarma* can be used in the disease for expelling out the vitiated *Dosha* [causative factor] causing the disease. In *Ayurvedic* texts, *Vamana Karma* [therapeutic emesis] and *Raktamokshana* [blood- letting] are chief treatment mentioned for *Yuvanapidaka* along with certain topical applications and oral medications.<sup>4</sup>

#### MATERIALS AND METHODS:

In this study a total 17 patients were registered and 15 patients completed the whole trial.

**Source of data:** Patients indicated and fit for trial were selected from outpatient and inpatient department of *Panchakarma*, National Institute of *Ayurveda* Hospital, Jaipur.

**Methods:**

**Statistical method:** Wilcoxon test

**Patient consent:** The treatment procedure with its different steps and the outcome was properly explained in detail to the patients and a written consent from the patients was obtained before enrolling in the clinical study.

**Diagnostic Criteria:** Patients were thoroughly examined both subjectively and objectively. Detailed history pertaining to previous ailment, previous treatment history, family history, habits, physical examination and systemic examination findings were noted. Subjects were registered in the clinical trial and detail information was documented in the case proforma prepared for the study. The parameters for diagnosis were selected on the base of *Ayurveda* as well as modern aspects. Patients with symptoms like *Pidaka* [papules] on face including *Medogarbhavta* [filling material], *Ruja* [pain], *Daha* [burning sensation], *Srava* [discharge] etc.

#### Inclusion Criteria:

- Age group between 14-40 years irrespective of sex, education and place.
- Diagnosed cases of *Yuvanapidaka*/Acne Vulgaris.
- Patients fit for *Jalukavacharana* [leech therapy].

#### Exclusion Criteria:

- Patients age less than 14 years and more than 40 years.
- Patients suffering with diabetes, tuberculosis, endocrine disorder, hypertension.
- Patients suffering with bleeding disorders.
- Patients unfit for *Jalukavacharana* [leech therapy].

#### Criteria for Assessment:

Results were assessed on the basis of Subjective parameters like *Toda* [pricking sensation], *Kandu* [itching], *Daha* [burning sensation], *Srava* [discharge] and Objec-

tive parameters like size of *Pidaka* [papules], number of *Pidaka*, *Ghnata* [depth], *Shotha* [inflammation], extent of lesion, discoloration, *Medogarbhata* [filling material], *Vranavastu* [scar tissue].

### RESULTS:

In the present study 17 patients were registered out of which 15 completed the trial.

The pattern of clinical improvement in various subjective and objective parameters were recorded and measured statistically, by using Graph pad instat 3.

**Table No.1: Showing the effect of therapy on subjective parameters (Wilcoxon match paired single ranked test)**

S.No	Symptoms	Mean		Dif.	% of Change	SD	SE	W	P	Results
		BT	AT							
1)	<b>Tenderness (<i>Toda</i>)</b>	1.93	0.60	1.33	68.91%	0.72	0.18	91	<0.001	ES
2)	<b>Itching (<i>Kandu</i>)</b>	1.80	0.40	1.40	77.77%	0.98	0.25	78	<0.001	ES
3)	<b>Burning (<i>Daha</i>)</b>	1.66	0.73	0.93	55.96%	0.70	0.18	66	<0.001	ES
4)	<b>Discharge (<i>Srava</i>)</b>	0.73	0.13	0.60	81.82%	1.05	0.27	10	>0.05	NS

#### Analysis of subjective parameters as per table no.1

- Statistically Extremely significant results ( $p < 0.001$ ) were found in tenderness (68.91%), Itching (77.77%), burning (55.96%).

- Statistically non significant results ( $p > 0.05$ ) was found in discharge (81.82%).

**Table No. 2. Showing the effect of therapy on objective parameters: (Wilcoxon matched paired single ranked test)**

S.No.	Symptoms	Mean		Dif.	% of Change	SD	SE	W	P	Results
		BT	AT							
1	<b>No. of <i>Pidaka</i></b>	2.40	0.66	1.73	72.20%	0.79	0.20	105	<0.001	ES
2	<b>Size of <i>Pidaka</i></b>	1.86	0.33	1.53	82.11%	0.63	0.16	105	<0.001	ES
3	<b>Hardness(<i>Ghnata</i>)</b>	1.46	0.26	1.20	81.79%	0.56	0.14	105	<0.001	ES
4	<b>Swelling(<i>Shotha</i>)</b>	1.26	0.20	1.06	84.21%	0.59	0.1591	91	<0.001	ES
5	<b>Discoloration(<i>Vaivarnya</i>)</b>	0.80	0.06	0.73	91.66%	1.03	0.26	21	<0.05	S
6	<b><i>Medogarbhata</i></b>	0.80	0.13	0.66	83.33%	1.17	0.30	10	>0.05	NS
7	<b><i>Vranavastu</i></b>	0.33	0.13	0.20	60%	0.56	0.14	3	>0.05	NS
8	<b>Extent of lesion</b>	1.93	0.53	1.40	72.42%	0.63	0.16	120	<0.001	ES

#### Analysis of objective parameters as per table no. 2

- Statistically extremely significant results ( $p < 0.001$ ) were found in no. of *Pidaka* (72.20%), size of *Pidaka* (82.11%), extent of lesion (72.42%), hardness (81.79%), swelling (84.21%).
- Statistically significant result ( $p < 0.05$ ) was found in discoloration (91.66%)

- Statistically insignificant results ( $p > 0.05$ ) were found in *Vranavastu* (60%), *Medogarbhata* (83.33%).

### DISCUSSION

Leech is considered to be the *Paramsukumar* [most convenient]remedy for blood-letting in adolescents, older people, fearful, women, soft personality people in *Ayurvedic* classics.<sup>5</sup>As acne vulgaris af-

fects adolescent age group commonly, *Jalaukavacharana* was taken for the study. Leech takes out vitiated *Rakta* along with *Dosha* specially *PittaDosha* [bile] from the nearby area, which causes *Srotoshodhana* [cleansing of channels] locally. This *Shodhana* reduces the lesions i.e. *Pidaka* due to *Raktadushti* [unpurified blood]. Also, it lessens the associated symptoms that were occurring due to the vitiated *Pitta* like *Daha*, *Paka* [suppuration] and *Vaivarnyata* [discoloration]. As it reduces *Kapha* symptoms i.e. *Kandu*, *Snigdghata* [unctuous] as well, therefore *Jalaukavacharana* must be removing vitiated *Kapha* too, to some extent. *Srotoshodhana* causes *Anulomana* [removal] of trapped *Vata*, therefore reduction in *Vedana* [pain] and *Vaivarnyata* were also observed. Recent studies have reported presence of analgesic substances in leech saliva. Modern medical science studies have also reported the presence of various biologically active substances<sup>6</sup> in the leech saliva which are helpful in reducing inflammation and pain. Leech's biological enzymes also possess anti-phlogostic action which removes local obstruction of blood. These substances relieve venous congestion by increasing venous drainage as well as increase oxygenated blood supply near the applied area.

A change in the composition of the blood also occurs after leech application. The proportion of serum increases after bleeding. It facilitates more production of fresh blood. All these facts support rationality behind the effect obtained by *Jalaukavacharana* on acne lesion.

#### **Probable mode of Action of *Jalaukavacharana*:**

*Jalaukavacharana* has been considered as a remedy for *RaktaPradoshajaVyadhi* [blood disorders], *TridoshajaPrakopa-*

*kaandChirakari* [chronic] disease. For excess quantity of *Dosha*, *Shodhana* may be required so, *Raktamokshana* among the *Shodhana* may give better relief than other *Shodhana* particularly when *Rakta* is vitiated. As in *Yuvanapidaka* vitiated *Dosha/Dhatu/Mala* [basic bio-elements] gets accumulated in *Srotas* [channels], causing blockages and leads to *Pidaka* formation. *Jalaukavacharana* being a bio-purificatory method removes deeply seated toxins by letting out blood, clearing *Srotas* and pacifying vitiated *Dosha*. As *Jalaukavacharana* is the preferred way of blood-letting in *Sukumaraprakriti*, therefore it was selected here for *Raktamokshana*. Leeches applied on the skin, sucks the blood from superficial area may be from capillaries or extracellular cellular compartment. By experiment, PO<sub>2</sub> of leech expelled blood and PO<sub>2</sub> of arterial was measured. The suggestive findings were that PO<sub>2</sub> of leech expelled blood comparatively less than the arterial blood of Human. Although the amount of oozed blood in case of leech therapy is very less in comparison to tradition venipuncture, but the efficacy should not be judged by the amount of blood. Leech application not only removes blood from the site but also injects biologically active substances which help to manage various ailments. Leech's saliva contains a complex mixture of different biologically and pharmacologically active substances which gets secreted into the wound. Some of them are Hirudin, Platelet aggregation inhibitors, Calin, Apyrase, CollagenaseA, prostaglandin, Proteinase inhibitors, Kallikrein inhibitor, Proteinases, a vasodilator substance, an anaesthetizing substance etc. These are said to be responsible for various biological effects seen on the body after leech application. Like Hirudin and Calin which act as anticoagulants, also pre-

venting inflammation and slow cleansing of wound. Histamine by its vasodilation property allows more blood to come to the site of leech application or lesion thus replacing old stagnant blood with fresh blood. Overall all biologically active substances renders thrombolytic, anti-inflammatory and immune stimulant action.<sup>7</sup> Secondary bleeding for few hours, due to hirudin, causes removal of toxins<sup>8</sup> along with increased circulation to that particular area, promoting faster wound healing without any scar formation. A healthy cell gets sick when it is deprived of needed oxygen and nutrition, and is unable to remove toxins accumulated during metabolism. Biologically active substances in leech saliva help the cells to absorb necessary nutrition and eliminate toxins. The diuretic and antibiotic action of Hirudin, the cleansing effect produced by secondary haemorrhage by Calin, anti-inflammatory and antibiotic effect of Piavit, Eglins-Bdellins etc. add to the efficacy of leech application in Acne Vulgaris.

During leech therapy, leeches are placed directly on the site of lesion, so that they can feed directly on the pus and at the same time, more leeches are placed around the diseased area to get rid of the pooled blood. Because pooled blood causes pressure, leading to tenderness, Bloodletting, on the other hand relieves the patient from pain. Also, it is already proven that leech saliva contains analgesics<sup>9</sup> which may be the reason behind pain relief. It can also be assumed as the leech sucks stagnant blood, *Shodhana* of the morbid *Dosha* via sucked blood occurs, which in turn results in the *Srotoshuddhi* and trapped *Vata* gets relieved which was responsible for the pain. According to modern science, leech injects anti-inflammatory and bacteriostatic substances with its saliva which helps in sub-

siding of the associated symptoms. A study revealed that *Staphylococcus aureus* bacteria, which causes infection of blood, bones and lungs, feeds on iron. Therefore, lesser the available iron in the system, less the chance of *staphylococcus* infection being present.<sup>10</sup> Relief in infective/inflammatory conditions by *Jalaukavacharana* can be attributed to results obtained by this study. *Jalaukavacharana* is indicated by *Acharyas* in *Rakta-Dushti* with *Pitta* involvement. In *Yuvanapidaka* also, there is primarily *Rakta-Dushti* due to *Pitta* and *Kapha*. *Sushruta* declared that *Raktamokshana* not only purifies the channels of the area of application, but also lets the other parts of the body become free from disease and action is fast than other shaman remedies. *Jaluka* sucks only the impure blood with ideal example of *Shwana* by *Vagbhata*. *Shodhana* of the vitiated *Pitta* and *Rakta* by *Jalaukavacharana* improves complexion by relieving *Vaivarnyata* which might be the reason behind the reduced *Vaivarnyata* in the patients involved in this study.

## CONCLUSION

- The term *Yuvanapidaka* indicates the prevalence of the disease in the *Yavana* [young age] stage of the *Madhyama-Vaya*.
- The cardinal feature of the disease, *ShalmalikantakavatPidaka*, *Toda* and *GhanaPidaka* were observed in all the 15 patients.
- *Yuvanapidaka* has clear-cut resemblance with modern disease *Acne Vulgaris* which is called to be a physically and psychologically scarring disease.
- Although *Vata*, *Kapha* and *Rakta* are mentioned as *Dosha-Dushya* involved in the pathogenesis of the disease, *Pittaja* symptoms were also found in the disease like *Daha* and *Paka*.

- *Vataja* symptoms were found to be very less or in specific patients only. Most common *Vataja* symptom found in patients was *Vedana*.
- *Snigdhatata/Kleda* over face was the most common type of associated complaint seen in almost every patient followed by *Paka* and *Daha*. *Shotha* and *Srava* were the least persisting associated complaint in *Yuvanapidaka* patients.
- Majority of the patients used to have *Vata-Pitta* dominancy followed by *Kapha-Pitta* dominancy in their *Pra-kriti*.
- *Jalaukavacharana* alone is very significant in relieving the associated complaints like *Kandu*, *Daha* and *Vedana* due to elimination of vitiated *Rakta* indirectly correcting *PittaDosha*, due to *Srotoshodhana* effect, due to improving local blood circulation, due to various bioactive substances like anti-inflammatory substances released by *Jalauka*.
- The results were encouraging; hence further studies may be conducted including large population in this direction.

## REFERENCES

1. The epidemiology of acne vulgaris in late adolescence- NCBI, www.ncbi.nlm.nih.gov.com
2. Sushruta Samhita Nidana Sthana 13/3: With Hindi commentary by Kaviraj Ambikadatta Shastri, Reprint edi. 2009, Chaukhambha Sanskrita Sans-thana, Varanasi.
3. Sushruta Samhita Nidana Sthana 13/38: With Hindi commentary by Kaviraj Ambikadatta Shastri, Reprint edi. 2009, Chaukhambha Sanskrita Sans-thana, Varanasi.
4. Sushruta Samhita Chikitsa Sthana 20/37: With Hindi commentary by Kaviraj Ambikadatta Shastri, Reprint edi. 2009, Chaukhambha Sanskrita Sans-thana, Varanasi
5. Sushruta Samhita Sutra Sthana 13/3: With Hindi commentary by Kaviraj Ambikadatta Shastri, Reprint edi. 2009, Chaukhambha Sanskrita Sans-thana, Varanasi.
6. RICAMRIMPEX, Available from <http://leeches-medicinalis.com/the-leeches/biology>
7. Kanti Kar Pulak, Mechanism of Panchkarma & Its Module of Investigation, Chaukhamba Sanskrit Pratishthan, Delhi, First Edition (2013)
8. Mohammad Ghawi, Abbas et al., Free Radical Scavenging Activity of the Medicinal Malaysian Leech Saliva Extract, *Hirudinarianianillensis*, Journal of Bioequivalence & Bioavailability; Spec2012; 1
9. RICAMRIMPEX, Available from <http://leeches-medicinalis.com/the-leeches/biology/>
10. Kanti Kar Pulak, Mechanism of Panchkarma & Its Module of Investigation, Chaukhamba Sanskrit Pratishthan, Delhi, First Edition (2013)

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