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 vitiating 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 Ayurvedaas 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 YuvanapidakaChikitsa 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.\textsuperscript{1} Yuvanapidaka [acne vulgaris] is described in Kshudraroga [minor skin diseases].\textsuperscript{2} Due to aggravation of Kapha [phlegum], 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.\textsuperscript{3} Modern medications for acne include topical therapies; antimicrobials, hormones, surgery, U-V Irradiations; Intralesions 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 vulgaris. \textit{Panchakarma} can be used in the disease for expelling out the vitiated \textit{Dosha} [causative factor] causing the disease. In Ayurvedic texts, \textit{Vamana Karma} [therapeutic emesis] and \textit{Raktamokshana} [blood-letting] are chief treatment mentioned for Yuvanapidaka along with certain topical applications and oral medications.\textsuperscript{4}

**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 \textit{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 Medogarbhatva [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 Obje-
tive parameters like size of Pidaka [papules], number of Pidaka, Ghnata [depth], Shotha [inflammation], extent of lesion, discoloration, Medogarbhatva [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)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Symptoms</th>
<th>Mean BT</th>
<th>Dif.</th>
<th>% of Change</th>
<th>SD</th>
<th>SE</th>
<th>W</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tenderness (Toda)</td>
<td>1.93</td>
<td>0.60</td>
<td>1.33</td>
<td>0.72</td>
<td>0.18</td>
<td>91</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>2</td>
<td>Itching (Kandu)</td>
<td>1.80</td>
<td>0.40</td>
<td>1.40</td>
<td>0.98</td>
<td>0.25</td>
<td>78</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>3</td>
<td>Burning (Daha)</td>
<td>1.66</td>
<td>0.73</td>
<td>0.93</td>
<td>0.70</td>
<td>0.18</td>
<td>66</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>4</td>
<td>Discharge (Srava)</td>
<td>0.73</td>
<td>0.13</td>
<td>0.60</td>
<td>1.05</td>
<td>0.27</td>
<td>10</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Symptoms</th>
<th>Mean BT</th>
<th>Dif.</th>
<th>% of Change</th>
<th>SD</th>
<th>SE</th>
<th>W</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. of Pidaka</td>
<td>2.40</td>
<td>0.66</td>
<td>1.73</td>
<td>0.79</td>
<td>0.20</td>
<td>105</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>2</td>
<td>Size of Pidaka</td>
<td>1.86</td>
<td>0.33</td>
<td>1.53</td>
<td>0.63</td>
<td>0.16</td>
<td>105</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>3</td>
<td>Hardness(Ghnata)</td>
<td>1.46</td>
<td>0.26</td>
<td>1.20</td>
<td>0.56</td>
<td>0.14</td>
<td>105</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>4</td>
<td>Swelling(Shotha)</td>
<td>1.26</td>
<td>0.20</td>
<td>1.06</td>
<td>0.59</td>
<td>0.159</td>
<td>91</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
<tr>
<td>5</td>
<td>Discoloration(Vaivarnya)</td>
<td>0.80</td>
<td>0.06</td>
<td>0.73</td>
<td>1.03</td>
<td>0.26</td>
<td>21</td>
<td>&lt;0.05</td>
<td>S</td>
</tr>
<tr>
<td>6</td>
<td>Medogarbhta</td>
<td>0.80</td>
<td>0.13</td>
<td>0.66</td>
<td>1.17</td>
<td>0.30</td>
<td>10</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>7</td>
<td>Vranavastu</td>
<td>0.33</td>
<td>0.13</td>
<td>0.20</td>
<td>0.56</td>
<td>0.14</td>
<td>3</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>8</td>
<td>Extent of lesion</td>
<td>1.93</td>
<td>0.53</td>
<td>1.40</td>
<td>0.63</td>
<td>0.16</td>
<td>120</td>
<td>&lt;0.001</td>
<td>ES</td>
</tr>
</tbody>
</table>

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 insignificant results (p>0.05) were found in Vranavastu (60%), Medogarbhta (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. As acne vulgaris af-
ffects adolescent age group commonly, Jalukavacharana 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 Shodhama 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 Da- ha, Paka [ suppuration] and Vaivarnyata [ discoloration]. As it reduces Kapha symptoms i.e. Kandu, Snigdhata [ 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 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 Jalaukavacha- charana:
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 DoshalDhatuMala [ basic bio-elements] gets accumulated in Srotas [ channels], causing blockages and leads toPidaka 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 Sukumaraparakriti, therefore it was selected here for Raktamokshana. Leeches applied on the skin, sucks the blood from superficial area may be from capillaries or extra-cellular cellular compartment. By experiment, PO2 of leech expelled blood and PO2 of arterial was measured. The suggestive findings were that PO2 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, Kal- likrein 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. Secondary bleeding for few hours, due to hirudin, causes removal of toxins 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-Bedllins 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 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. 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 Raktabhay 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 GhanaPidakawere 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 Doshaka-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.

Snigdhatal/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 Prakriti.

Jalaukavacharana alone is very significant in relieving the associated complaints like Kandu, Daha and Vedana etc 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

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