ABSTRACT

Vatarakta is the illness that exhibits different signs and symptoms based upon the Dosha, Utthana and Gambheera Avastha. Dietary habits and life style modalities play a major role in the causation of Vatarakta. Though various remedies are there to treat it, Raktamokshana is said to be an effective, and standard technique. Hence it is claimed to be an important affective tool in the management of Vatarakta. This study is undertaken to explore and compare the efficacy of Jaloukavacharana and Siravyadhana in Vatarakta.

Randomized comparative clinical trial was adopted in this study. 40 subjects fulfilling diagnostic and inclusion criteria were selected and divided into two groups. The day on which the procedure was conducted was considered as first day of the trail. Follow up was on 8th & 15th day. Total duration of Study was 15 days. In both the group there is a significant improvement of subjective and objective symptoms except on Vaivarnya. The collected data is statistically analysed Jaloukavacharana is found to be more effective in the features Daha and Shopha. Siravyadhana is more effective in Shoola and Vivarnya. Both the procedure shows equal effect on Sparshaasahatva. The overall results of Group A are 82.11% and Group B is 82.76%. Both the treatments are equally effective in Vatarakta. Hence alternative hypothesis H3 is proved. This simple and cost-effective treatments are painless do not require any anaesthesia. Hence it can be easily performed in OPD level on day-care basis.

KEYWORDS: Jaloukavacharana, Raktamokshana Siravyadhana, Vatraakta.

INTRODUCTION

Vatarakta is very distressing disease due to its continued relapsing and remittent nature[1]. The factors said in the classics which are responsible for the Vatarakta are Viruddha Ahara and Mithya Vihara. These leads to the vitiation of Vayu and Rakta. Aggravated Vata paves for vitiation of Rakta in turn leading to further aggravation of Vata, thus evolves condition Vatarakta.

In this context the modalities under scrutiny are Siravyadhana[2] and Jaloukavacharana[3] which annihilate the Doshic vitiation in the aforesaid condition. Raktamokshana is more effectual in quick action than administering Snehana and Alepa[4]. Expulsion or removal of vitiated Rakta (as well as other vitiated Doshas) from the body is known as Raktamokshani[5]. This can be done either through Siravyadhana (vene puncture) or with Jaloukavacharana (Leech therapy). Hereby, the study tries to expound the effectiveness of these two procedures on two groups of subjects.

Sushruta Acharya while explaining the Shastiupakrama mentioned that Rakta Visravana is very useful in Vedana Upashamana and to relive Achirottita Shopadi[6]. So, this study is also aimed to understand which among the two procedures are more capable of removing the Avarana.

Objectives of the Study

1. To study in detail about Vatarakta
2. To study the clinical efficacy of Jaloukavacharana on Vatarakta
3. To study the clinical efficacy of Siravyadhana on Vatarakta. To compare the results of Jaloukavacharana as well as Siravyadhana and analyse the results statically.

Source of Data

Patients who attended the OPD and IPD of K.V.G. Ayurvedic Medical College and Hospital, Sullia, with signs and symptoms of Vatarakta were selected for this study.

Method of Collection of Data

Data regarding history, duration of illness, findings on clinical examination and other relevant information including Lab investigations were recorded in a case proforma specially designed for...
this study, based on the clinical features of the disease Vatarakta. 

**Inclusion criteria**
- Patients with clinical features of Vatarakta
- Patients with age ranging from 20-60 years

**Exclusion criteria**
- Patients of age below 20 years and above 60 years.
- Patients with other systemic diseases
- Patients contraindicated for Siravyadhana and Jaloukavacaharana
- Patient with the history of bleeding diathesis
- Pregnant women

**Diagnostic criteria**
The clinical features of “Vatarakta” as mentioned in Classics were taken as the diagnostic criteria. 
Selected subjective and objective parameters are graded accordingly.

**Pathological investigation**
Routine haematological investigations like Hb%, total count, differential count, ESR, bleeding time, clotting time, RBS were done to rule out any other disease pathology as well as to evaluate safety and efficacy of the trial therapy.

**Grouping and sampling**
Total 40 patients of Vatarakta were included in this study. They were randomly divided into two groups.

**Study duration**
- Jaloukavacharana- 1 sitting, on the first day only
- Siravyadhana- 1 sitting, on the first day only
- Follow up- On 8th day & 15th day
- Total duration-15 days

**Observation and recording of data**
- First Recording-Pre-treatment examination (1st day BT)
- Second Recording-Soon after the treatment (1st day AT)
- Follow up observation- On 8th day and 15th day

**Assessment Criteria**
Post procedural observation of the assessment criteria was done and recorded.

**Subjective parameter**
- Shoola
- Daaha

**Objective parameter**
- Sparshaasahatva
- Shopha
- Vaivarnya

### Table 1: Shoola

| Grade     | Description                                                                 |
|-----------|-----------------------------------------------------------------------------|
| Absent    | no pain                                                                     |
| Avara     | pain of bearable in nature, but no difficulty in movement of joints, appears frequently |
| Madhyama  | slight difficulty in joint movements due to severe pain requires medication and pain remain throughout the day |
| Pravara   | Difficult to move the joints due to pain. Affects the sleep also             |

### Table 2: Daha

| Grade   | Description                               |
|---------|-------------------------------------------|
| Absent  | no burning sensation                      |
| Avara   | occasionally burning sensation             |
| Madhyama| frequently burning sensation               |
| Pravara | continuous burning sensation               |

### Table 3: Sparshaasahatva

| Grade   | Description                               |
|---------|-------------------------------------------|
| Absent  | no tenderness                            |
| Avara   | slight tenderness                         |
| Madhyama| moderate tenderness                       |
| Pravara | severe tenderness                         |

### Table 4: Shopha

| Grade   | Description                               |
|---------|-------------------------------------------|
| Absent  | no swelling                               |
| Avara   | slight swelling                           |
| Madhyama| moderate swelling                         |
| Pravara | severe swelling                           |
Table 5: Vaivarnya

| Vaivarnya | Grade |
|-----------|-------|
| Absent- no discoloration | 0     |
| Avara     | 1     |
| Madhyama  | 2     |
| Pravara   | 3     |

Observation and Results

Table 6: Effect of Jaloukavacharana on Daha in Group A

| Symptom | Mean score | % | S.D (±) | S.E (±) | t value | p value |
|---------|------------|---|---------|---------|---------|---------|
| Daha    |            |   |         |         |         |         |
| BT      | AT         | 0.45 | 0.60   | 57      | 0.503   | 0.112   | 2.76    | <0.05   |
|         | FU1        | 0.30 | 0.75   | 71      | 0.444   | 0.008   | 3.76    | <0.05   |
|         | FU2        | 0.00 | 1.05   | 100     | 0.759   | 0.011   | 6.19    | <0.05   |
| AT-AT   |            |   |         |         |         |         |         |         |
| FU1-FU2 |            |   |         |         |         |         |         |         |

Statistical analysis showed that the mean score which was 1.05 before the treatment was reduced to 0.45 after the treatment and after follow up it became 0.00 with 100% improvement and this is a statistically significant (P<0.05).

Table 7: Effect of Siravyadhana on Daha in Group B

| Symptom | Mean score | % | S.D (±) | S.E (±) | t value | p value |
|---------|------------|---|---------|---------|---------|---------|
| Daha    |            |   |         |         |         |         |
| BT      | AT         | 0.55 | 0.25   | 31      | 0.444   | 0.099   | 0.89    | >0.05   |
|         | FU1        | 0.45 | 0.35   | 44      | 0.489   | 0.016   | 1.33    | >0.05   |
|         | FU2        | 0.10 | 0.70   | 87.5    | 0.923   | 0.021   | 2.98    | <0.05   |
| AT-AT   |            |   |         |         |         |         |         |         |
| FU1-FU2 |            |   |         |         |         |         |         |         |

Statistical analysis showed that the mean score which was 0.80 before the treatment was reduced to 0.55 after the treatment and after follow up it became 0.10 with 87.5% improvement and this is statistically significant (P<0.05).

Table 8: Effect of Jaloukavacharana in Group-A on Shoola

| Symptom | Mean score | % | S.D (±) | S.E (±) | t value | p value |
|---------|------------|---|---------|---------|---------|---------|
| Shoola  |            |   |         |         |         |         |
| BT      | AT         | 1.50 | 0.65   | 30      | 0.489   | 0.109   | 3.44    | <0.05   |
|         | FU1        | 1.00 | 1.15   | 53      | 0.489   | 0.016   | 5.88    | <0.05   |
|         | FU2        | 0.65 | 1.50   | 70      | 0.513   | 0.010   | 8.08    | <0.05   |
| AT-AT   |            |   |         |         |         |         |         |         |
| FU1-FU2 |            |   |         |         |         |         |         |         |

The mean score from 2.15 to 1.50 after the treatment and after follow up it became 0.65 with 70% improvement. It is found to be statistically significant (P<0.05).

Table 9: Effect of Siravyadhana in Group-B on Shoola

| Symptom | Mean score | % | S.D (±) | S.E (±) | t value | p value |
|---------|------------|---|---------|---------|---------|---------|
| Shoola  |            |   |         |         |         |         |
| BT      | AT         | 1.45 | 0.80   | 36      | 0.410   | 0.092   | 4.07    | <0.05   |
|         | FU1        | 1.25 | 1.00   | 44      | 0.324   | 0.009   | 5.75    | <0.05   |
|         | FU2        | 0.65 | 1.60   | 71      | 0.503   | 0.011   | 8.89    | <0.05   |
| AT-AT   |            |   |         |         |         |         |         |         |
| FU1-FU2 |            |   |         |         |         |         |         |         |

The mean score from 2.25 to 1.45 after the treatment and after follow up it became 0.65 with 71% improvement. It is found to be statistically significant (P<0.05).

Table 10: Effect on Jaloukavacharana in Group-A on Sparshaasahatva

| Symptom       | Mean score | % | S.D (±) | S.E (±) | t value | p value |
|---------------|------------|---|---------|---------|---------|---------|
| Sparshaasahatva| 1.50       |   |         |         |         |         |
| BT            | AT         | 0.95 | 0.55   | 37      | 0.605   | 0.135   | 2.03    | <0.05   |
|               | FU1        | 0.50 | 1.00   | 67      | 0.795   | 0.022   | 3.98    | <0.05   |
|               | FU2        | 0.10 | 1.40   | 93      | 0.940   | 0.014   | 5.98    | <0.05   |
| AT-AT         |            |   |         |         |         |         |         |         |
| FU1-FU2       |            |   |         |         |         |         |         |         |
The mean score which was 1.50 before treatment reduced to 0.95 after the treatment and after follow up it became 0.10 with 93% improvement, study is statistically significant (P<0.05).

Table 11: Effect of Siravyadhana in Group-B on Sparshaasahatva

| Symptom       | Mean score | %  | S.D (±) | S.E (±) | t value | p value |
|---------------|------------|----|---------|---------|---------|---------|
| Sparshaasahatva | 1.50       |    | 0.70 0.80 | 53 | 0.410 0.092 | 4.66 <0.05 |
| FU1           | 0.50 1.00  | 67 | 0.324 0.006 |      | 5.63 <0.05 |
| FU2           | 0.10 1.40  | 93 | 0.598 0.009 |      | 9.20 <0.05 |

The mean score which was 1.50 before treatment reduced to 0.70 after the treatment and after follow up it become 0.10 with 93% improvement study is statistically significant (P<0.05).

Table 12: Effect of Jaloukavacharana in Group-A on Shopha

| Symptom   | Mean score | %  | S.D (±) | S.E (±) | t value | p value |
|-----------|------------|----|---------|---------|---------|---------|
| Shopha    | 1.75       |    | 1.00 0.75 | 43 | 0.444 0.099 | 3.00 <0.05 |
| FU1       | 0.75 1.00  | 57 | 0.795 0.019 |      | 4.02 <0.05 |
| FU2       | 0.05 1.70  | 97 | 0.923 0.016 |      | 8.11 <0.05 |

The mean score which was 1.75 before treatment reduced to 1.00 after the treatment and after follow up it became 0.05 with 97% improvement study is statistically significant (P<0.05).

Table 13: Effect of Siravyadhana in Group-B on Shopha

| Symptom   | Mean score | %  | S.D (±) | S.E (±) | t value | p value |
|-----------|------------|----|---------|---------|---------|---------|
| Shopha    | 1.55       |    | 0.95 0.60 | 39 | 0.503 0.112 | 2.14 <0.05 |
| FU1       | 0.60 0.95  | 61 | 0.510 0.013 |      | 3.97 <0.05 |
| FU2       | 0.15 1.40  | 90 | 0.754 0.012 |      | 6.93 <0.05 |

The mean score which was 1.55 before treatment reduced to 0.95 after the treatment and after follow up it become 0.15 with 90% improvement, study is non-significant improvement (P>0.05).

Table 14: Effect of Jaloukavacharana over Vaivarnya in Group-A

| Symptom  | Mean score | %  | S.D (±) | S.E (±) | t value | p value |
|----------|------------|----|---------|---------|---------|---------|
| Vaivarnya| 0.95       |    | 0.85 0.10 | 11 | 0.308 0.069 | 0.33 >0.05 |
| FU1      | 0.70 0.25  | 26 | 0.444 0.042 |      | 0.85 >0.05 |
| FU2      | 0.60 0.35  | 37 | 0.489 0.019 |      | 1.21 >0.05 |

The mean score which was 0.95 before treatment reduced to 0.85 after the treatment and after follow up it become 0.60 (37%) with non-significant improvement (P>0.05).

Table 15: Effect of Siravyadhana over Vaivarnya in Group-B

| Symptom  | Mean score | %  | S.D (±) | S.E (±) | t value | p value |
|----------|------------|----|---------|---------|---------|---------|
| Vaivarnya| 0.50       |    | 0.45 0.05 | 10 | 0.224 0.050 | 0.20 >0.05 |
| FU1      | 0.40 0.10  | 20 | 0.308 0.031 |      | 0.42 >0.05 |
| FU2      | 0.30 0.20  | 40 | 0.410 0.021 |      | 0.89 >0.05 |

Study showed statistically Non significant improvement (P>0.05). The mean score which was 0.50 before treatment reduced to 0.45 after the treatment and after follow up it became 0.30 with 40% improvement.
Fig No: 1 Procedure of Jaloukavacharana
1- Jalouka in fresh water 2- Jalouka in Haridra Jala 3- Covered the body of Jalouka with Pichu 4- horse-shoe shape neck of Jalouka showing proper sucking 5,6- Chardana of Jalouka

Fig No: 2 Procedure of Siravyadhana
1- Sthanika Snehana 2- Sthanika Patta Sweda 3- Puncturing the vein 4- Flowing of blood
Assessment of Total Effect of Therapy

Result on Group A

![Overall Effect of Group A](image)

Result on Group B

![Overall Effect of Group B](image)

Table 16: Comparative results of Group-A and Group-B

| Characteristics | Group-A | | | Group-B | | |
|-----------------|---------|---|---|---------|---|---|
| | Signs and Symptoms | Mean score | Percentage of relief | Mean score | Percentage of relief |
| | | BT | FU | | BT | FU |
| Daha | 1.05 | 0.00 | 100 | 0.80 | 0.10 | 87.5 |
| Shoola | 2.15 | 0.65 | 70 | 2.25 | 0.65 | 71 |
| Sparshaasahatva | 1.50 | 0.10 | 93 | 1.50 | 0.10 | 93 |
| Shopha | 1.75 | 0.05 | 97 | 1.55 | 0.15 | 90 |
| Vaivarnya | 0.95 | 0.60 | 37 | 0.50 | 0.30 | 40 |

DISCUSSION

Effect of Jaloukavachara on Daha

Vitiated Rakta and Pitta causes severe burning sensation, Jalouka is claim to be Seetha and Madhura there by Jalouka decreases the Ushna, Teekshna Guna and cures the Daha. The present study with the statistical analysis shows 100% eradication of Daha by Jaloukavacharana. Process is highly significant.

Effect of Siravyadhana on Daha

In the present study 87.5% improvement was seen by Siravyadhana. This procedure removes the Dooshita Rakta and decreases the Rakta Dusti hence this statistically significant is the result.

Effect of Jaloukavacharana and Siravyadhana on Shoola

Shoola is purely due to vitiated Vata. due to the Vishamagni Agnimandhya occurs and it develops the Aama. The Aama eases the blockage of Srotas
which in turn aggravates the Vata causes the Shoolā. So, the vitiated Vata and Ama blocks the Rakta, by Anyonya avarana and the disease originates.[8]

By doing Rakta-mokshana Avarana is removed there by it decreases the pain. So, in this study both Jaloukavacharana and Siravyadhana have shown almost equal result.

The results in group A on Shoolā says that mean score is reduced from 2.15 to 0.65 i.e. 70% improvement. The P value is less than 0.05 and treatment is statistically significant.

In Siravyadhana group result is 71% there the mean score is reduced from 2.25 to 0.65. P value is less than 0.05 and the treatment is statistically significant.

**Effect of Jaloukavacharana and Siravyadhana on Sparshasahatva**

Sparsha-sahatva is mainly the symptom of Shonitavata condition[9], that too when Vata is predominant. When Avarana is removed tenderness reduces. Statistically both treatments don’t show any difference. Mean score of both the treatment was 1.50 and reduced to 0.10 and the treatment shows significant result i.e., 93% improvement.

**Effect on Shopha**

Shopha is a Tridosha condition when aggravated Vata affects the Kapha, Rakta and Pitta obstruction in the Srotas takes place.

**Jaloukavacharana**

As it is a localised condition in a Vata Rakta, when Jalouka is applied it does Shamana of vitiated Dosha and removes Dooshita Rakta. In the present study mean score before the treatment was 1.75 and it reduced to 0.05 (P value is less than 0.05) i.e., 97% improvement was seen and treatment is statistically significant.

**Siravyadhana**

Visravana is helpful in removing Achirothitta Shopha. By Visravana Avarodha of Srotas is removed there by decrease in the Shotha.[10] the present study revealed that mean score before the treatment was 1.55 and after the treatment it was 0.15, and P value less than 0.05 with 90% improvement and it is statistically significant.

**Effect of Jaloukavacharana and Siravyadhana on Vaivarnya**

Praküpitha Vata and vitiated Rakta get Sangha/ Avarodha in the Srotas. Here lakshanas of Vruddhi of Vata as well as Rakta favoring Vaivarnya of skin. Along with this the Pitta, Rakta in Ashraya-ashrayi Bhava and Bhrajaka Pitta in the Twak also responsible for altered Varna.[11] Here in Vatarakta Rakta Dhatu does Avarana to Pitta and Vata which causes Vaivarnya. By Raktamokshana these Dooshita Rakta and Avarana is removed there by Vaivarnya is decreased.

This study statistically shows that there is no significant improvement in Vaivarnya in Vatarakta by both procedures. Jaloukavacharanaa shows 37% improvement and Siravyadhana shows 40% improvement.

**Overall effect of Jaloukavacharanaa on Vatarakta**

Out of 20 subjects in group A 14 subjects show good improvement 1 shows moderate improvement and 5 subject show complete relief from the symptoms.

**Overall effect of Siravyadhana on Vatarakta**

Out of 20 subjects 11 show good improvement 1 moderate improvement and 8 got complete relief from the symptoms.

**Comparative result of group A and group B**

**Daha**

In the present study statistical analysis of subjective and objective parameter shows that Jaloukavacharana on the Daha shows good results (100%) and Siravyadhana shows 87.5 % results. Jaloukavacharana shows good results than Siravyadhana may be because Jalouka is Madhura and Sita which has good effect on Daha of Pitta and Rakta.

**Shoolā**

Statistical analysis of result of Jaloukavacharana on Shoolā shows 70% improvement and Siravyadhana shows 71% improvement i.e., almost equal results. It may be because, by doing both procedure Avarana of Vata and Rakta gets removed.

**Sparshasahatva**

Statistical analysis shows 93% improvement in both the groups. Both procedures are equally effective in decreasing Avarana of Vata and Rakta there by it reduces Sparshasahatva.

**Shopha**

Statistical analysis of Jaloukavacharana shows 97% result and Siravyadhana shows 90% improvement in Shopha. Jaloukavacharana shows more improvement than Siravyadhana because Visravana is good in subsiding the Achirothita Shotha, Shows good effect. It is because in the local action Jalouka are more powerful than Siravyadhana.

**Vaivarnya**

Statistical analysis of treatment by Jaloukavacharana shows 37% improvement and by Siravyadhana 40% improvement. But both treatments are statistically not significant. It may be because one sitting of procedures is not sufficient to remove the Vaivarnya.
Comparative results of overall effect in Group A and Group B

Comparative analysis of the overall effect of the treatment in both the groups was done statistically with unpaired t-test. It shows the treatments are statistically insignificant. Both the treatments are equally effective in Vatarakta.

Raktavisravana is the standard mode of treatment in Vatarakta. Rakta is the main Dooshya in this disease so by removing Dooshitha Rakta it gives good results.

Probable mode of action of Jaloukavacharanaa

Jalouka is one among the Anushastra and it is Sheetala and Madhura hence they may be used to decrease the Pitta.[12]

Vatarakta is a disease of Prakupitha Vata and Dooshitha Rakta. According to the texts the main treatment modality of Vatarakta is Raktamokshana. Rakta is having similar Gunas of Pitta. By doing Jaloukavacharana it will remove the Dooshitha Rakta and Pitta Shamana takes place. Prakupitha Vata also gets reduced by this treatment. The Pitta Shamaka effect of Jaloukavacharana results in the reduction of Daha, Shoppa and Sparshaasahatva.

Probable mode of Action of Siravyadhana

Siravyadhana is indicated in Sarvadehanusari Dooshha Rakta. And Raktamokshana can treat almost all disorders resulted due to the derangement in Mamsa, Meda, Asthi and Majja. It purifies the Dhamani and corrects the vitiated blood. It also purifies Rasa and Swedavaha srotas.

As it is a systemic disease and thereby Raktamokshana reduces the symptoms of Vatarakta.

CONCLUSION

Based on the literature, observation and results of this clinical study following conclusions are drawn.

Present lifestyle and dietary habits are the main contributing factors in the establishment of Vatarakta.

Most of the subjects were in Uttana Avasta. Jaloukavacharana and Siravyadhana are equally effective in the case of Vatarakta. Thus, alternative hypothesis is proved in this study.

While considering the symptom Daha and Shopha, Jaloukavacharana is found to be more effective. Likewise, in Shoola and Vivarnya Siravyadhana is more effective. In Sparshaasahatva both the procedure is equally effective.

For both procedures' materials required are easily available. They are simple and cost effective. Because they are painless do not require any anaesthesia. Hence can be easily performed in OPD level on day-care basis.

Repeated bloodletting periodically by Jaloukavacharana and Siravyadhana definitely gives good results.

All the symptoms except Vaivarnyaa responded to the treatment very well. Vaivarnya remained further may be because Raktamoshana is done only once which is not sufficient to reverse the pathology completely in such a short span.

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