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# A COMPARATIVE STUDY ON EFFICACY OF AGNIKARMA AND UPANAHAM IN VATAKANTAKA

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## ABSTRACT

*Ayurveda*, the science of life, which is an ancient healthcare system which is based on eternal principal of health life. The whole clinical approach of Ayurveda is based on prevention, promotive and curative aspect. *Vatakantaka* is that disorder, which interfere with the free locomotion of the individual resulting in hindrance to his daily activities. *Acharya Sushrutha* explain it under *Vatavyadi;* & in due course, other authors like *Vagbhata, Yogara-thnakara, Chakradatta, Vangasena* and *Madhavakara* also narrate the same. In *Vatakantaka* pain in the heel develops due to walking on uneven surfaces or excessive walking. Due to the *Nidanas, Vata* gets vitiated and reside at *Gulpha Sandhi*, produces the disease. *Sushruta* has mentioned different methods of management for different diseases. Here in the management of *vatakantak, Acharya* described, *sneha, upanaha, agnikarma, bandhana and unmardana.* Keeping in view of the many draw backs of modern methods of managements, a comparative clinical trial is aimed at the evaluation of the efficacy of *Agnikarma* with *such* and *Upanaha* with *kottanchukkadi choorna* in *Vatakantaka* with an intention to promote an effective, economical and simple treatment with no adverse effects

Keywords: Agnikarma, Upanaha, Vatakandak, Ayurveda

# INTRODUCTION

Ayurveda - the Upaveda of AtharvaVeda. It is not only the science which deals about the various diseases, their pathology and their treatment aspects but goes much beyond. Health and ailing, pleasure and pain, ease and disease are inborn properties of human life. Ayurveda is the nature's prescription to physical as well as mental diseases and it is the ancient wisdom best suited for modern man.

The happiness of every individual is derived through locomotion i.e., ability of using joints and bones. The moment person loses his power of locomotion, he not only feels himself a miserable creature but also as a burden to his family and society.*Vatakantaka* is that disorder, which interferes with the free locomotion of the individuals resulting in hindrance to his daily activities..In present era, everyone is expecting quick relief. So this old practice should be re-modelled and fitted to the needs of the present sophisticated world.

AcharyaSushruta has given foremost place to Vata-Vikara by giving 'VataVyadhiNidana'right at the beginning of Nidanasthana<sup>1</sup>, Acharya Charaka described it as KhudaVata, which is a synonym of Vatakantaka in the chapter Vatavyadhi Chikitsa. He explained this condition under the "Sthanabhedavayu lakshana"2. Chakrapani comments that KhudaVata is Gulpha Vata. In AstangaHridaya, Vatakantaka lakshanas are explained in Nidanasthana<sup>3</sup> and chikitsa in Chikitsa sthana. Chakradatta, Bhaisajyaratnavali and Vangasesamhitha,4,5,6. In Madhvamakhanda, na Vatavyadhyadhikara, Bhavamishra explained the lakshanas and treatment of Vatakantaka. From the treatment point of view he has stated Dahana, Snehana, Upanahana and a combination of indravarunimula, pippali and Guda for internal administration<sup>7</sup>. Lakshanas and treatment of Vatakantaka are explained by Yogarathnakara in Vatavyadhyadhikara of *Poorvardha<sup>8</sup>*. In madhava *Nidana*, *Vatakantaka* symptoms are explained in vatavyadhi nidana.9

Hence this *vyadhi*; the main *Dosha* involved is *Vata. Vatavyadhi* is defined as a *Vyadhi* caused only by *Vata. Vata* gets vitiated due to the *Nidanas* and after *Doshadooshyasammoorchana* produces diseases in a localized part or in the whole body. *Susruthacharya*  explains that by walking on uneven surfaces, *Vata* gets vitiated and produces pain. These diseases will not occur without *Vata*. After explaining main *Vatarogas* like *Pakshaghatha*, *Ardhitha*etc*Acharya* explains some *Sakthirogas* like *Padadaham*, *Pa-daharsham* etc. *Vatakantaka* is also explained one among these *Sakthirogas*.

*Vata* getting localized in the ankle joint either by placing the foot improperlywhile walking or by over exertion to the feet produces pain in the ankles. This iscalled as *vatakantaka*. Due to the *Nidana Vata* gets aggravated and localises in *Gulphasandhi*, producing pain. Pain is also called as *Shalya* according to *Acharya Susrutha*<sup>10</sup>

*Vatakantaka* can be correlated to painful heel in modern parlance. It is commonly seen in strenuous workers who experience severe pain especially in the morning and during walking after sitting for long time. It is mainly due to painful heel syndrome or tender heel pad or plantar fasciitis.

Acharya Sushruta suggests Snehana, Upanaha, Agnikarma, Bandhana, Unmardana as remedy for Vatakantaka<sup>11</sup>. Agnikarma is a parasurgical procedure described in Ayurveda. Agnikarma is a procedure, which is superior to Sastra, Kshara and Bheshaja & diseases cured by Agnikarma do not recur. Agnikarma which is an Anusasthrakarma is chosen as the treatment. Agni karma is practically known that it relieves pain instantly. Acharyas have specially advocated the use of Suchi for Agnikarma. There is a traditional practise by which the painful heel is kept on a heated mud tile, to relieve the pain. By applying this principle, Agnikarma was implemented in this disease which is easily available & economical, so is considered here.

The clinical efficacy of *Panchakarma* procedures deserves appreciation and hence continues to attract the people, physicians and research workers worldwide. Hence *Upanahasweda* was decided to be studied.

Research works have not been carried out so far on this topic. Hence it is decided to conduct a work on *Vatakantaka* by *Agnikarma* with *suchi* and *Upanaha* with *kottamchukkadi choorna*. Though both treatments involve heat as a major role, the study is designed to compare the efficacy of heat effect of *Agnikarma* and medicinal effects of *Upanaha Swed* 

**Materials And Methodology:** This is an attempt to make a research study to validate the principles of Ayurveda i.e. treating the disease *vatakantaka* with the help of *Agnikarma* with *suchi* and *Upanaha sweda* with *kottanchukkadi choorna* with statistical supports.

**Source Of Data :** Patients who attended the O.P.D and I.P.D, Department of *Shalyatantra* of K.V.G Ayurveda Medical College and Hospital, Sullia, during the period from November 2013 to march 2015 having the complaints of *shoola* at *pada* region were screened. Among them 30 patients fulfilling the inclusion criteria of the present study were taken. Detailed history taking and physical examinations were carried out in these patients. Relevant data along with the elaborate assessment of Pain & Tenderness were registered in the designed case Performa.

## **Inclusion Criteria:**

- 1. Age group between 20 and 60 years,
- 2. Irrespective of religion, sex and occupation.
- 3. Patients with signs and symptoms of *vatakantaka* as explained in classics.

#### **Exclusion Criteria:**

- 1. 1Patient suffering from severe systemic disease.
- 2. 2Person contraindicated of *agnikarma* and *swedana*

3. 3Following the fracture of calcanei and rupture Achilles tendon.

**Diagnostic Criteria:** The diagnosis is mainly based on the clinical presentation of the patient according to signs and symptoms of *vatakantaka* explained in classical *Ayurveda* texts which are described under subjective and objective parameters.

**Design:** A comparative clinical study with pre-test and post-test design was done in 30 patients diagnosed to have *vatakantaka*, fulfilling all the criteria of the study. They were selected randomly and were placed in two groups A & B.

#### Intervention:

Group A- Agnikarma done with suchi.

**Group B-** Upanaha sweda with kottanchukkadi choorna

**Posology:** External treatment.

**Follow Up Study-(FU)** :Assessment of pain & tenderness done-immediately after treatment, 7 days after treatment & 14 days after treatment.

#### **Assessment Criteria**

Subjective Parameters: Pain

**Objective Parameters:**Tenderness

Assessment was made on the basis of improvement in signs and symptoms for which suitable scores were assigned.

| Table 1: Assessment Parameters | with Grading of | of pain and | tenderness- |
|--------------------------------|-----------------|-------------|-------------|
|--------------------------------|-----------------|-------------|-------------|

| PAIN   | Grade |
|--|-------|
| No pain  | 0     |
| (Level-1-I feel no pain can perform normal activity)   |       |
| Mild pain  | 1     |
| (Level -2-I feel slight discomfort, it does bother me a bit)   |       |
| (Level-3- I feel mild pain, I can still do my daily work with hindrance )                                  |       |
| Moderate pain  | 2     |
| (Level-4- I feel moderate pain, activities slightly alters)  |       |
| (Level-5-I am uncomfortable& move slowly but still going to work)  |       |
| Severe pain  | 3     |
| (Level-6- I am very uncomfortable, perhaps massaging or holding. Painful area saying 'ouch' to myself as I |       |
| move around. Walkingis more painful)   |       |
| Tenderness   |       |
| No tenderness  | 0     |
| Part is tender   | 1     |

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| The patient winces and withdraws the affected part. | 2 |
|---|---|
| The patients will not allow the part to be touched. | 3 |

For assessing the improvement of symptomatic relief and to analyse statistically, the observations were recorded before, after the treatment and after the follow up. The mean percentage, S.D, SE and t-value (paired) were calculated. Comparisons of efficacy of both the groups are done.

#### **Materials And Tools For Therapeutic Intervention**

Table 1: Showing materials & tools required for therapy

| Group A                                 | Group B                                  |
|---|--|
| Artery forceps – one                    | Tilataila- Sufficient quantity           |
| Sterile Cotton swab-Sufficient quantity | Gas stove-one                            |
| Distilled water Sufficient quantity     | Towel-one                                |
| Gas stove-one                           | Hot water                                |
| Marker pen- one                         | Kottanchukadichoorna-Sufficient quantity |
| Hole towel- one                         | Thick Bandage cloth                      |
| Kidney tray                             | Steel vessel                             |
| Suchi-one                               | spoon                                    |
| Madhu- Sufficient quantity              | Sterile Gauze & pad- Sufficient quantity |
| Ghritha-Sufficient quantity             | Cloth bandage                            |

#### Details of suchi:

Length: 8.8cm Thickness: 1.5mm Weight: 670mg **details of** *upanaha kottanchukadichoorna* 

# Procedure Of Agnikarma

**Poorva karma:** Initially, collection of required materials is made.Patient is explained the procedure in detail and consent is obtained. Then patient was made to lie in supine position over the minor O.T table. The effected heel region where *Agnikarma*has to be performed was placed in suitable position. The maximum tender areas was elicited and marked with the help of a marker pen. The part was cleaned with distilled water and draped with a sterile towel.

*Pradhanakarma:* After that moped area was dried, *suchi* was heated to red hot over the burning gas stove. The staff nurse was advised to hold the leg in suitable

position. Later *Agnikarma*was performed with red hot *suchi* in *Binduakruthi* at marked pointsfor two seconds at a spot in such a way that *samyak dagdha lakshanas* were observed. While applying *suchi* slight pressure is also exerted. When it becomes cool, it is again placed on the gas stove & re heated. 6-7 number of *Bindu* made were made in circular fashion to cover the affected tender area.

**Paschat Karma:** Immediately after procedure, the mixture of *Goghrita* and *Madhu* was applied over the site of *Agnikarma*. The patient was advised to rest in supine position for half an hour and was sent home in case of OP or to the ward in case of IP. The patient was advised to keep the area clean and dry & asked to come for follow up after 7 days.

**Procedure Of** *Upanaha Sweda: Kottanchukkadi choorna* which is available in the market is kept ready for the procedure

| Dravya    | Botanical name      | Family      |
|-----------|---------------------|-------------|
| Kushta    | Saussarialappa      | Asteraceae  |
| Sunti     | Zingiberofficinale  | Scitaminae  |
| Vacha     | Acoruscalamus       | Araceae     |
| Shigru    | Moringaoleifera     | Moringaceae |
| Lasuna    | Allium sativum      | Liliaceae   |
| Devadruma | Cedrusdeodora       | Pinaceae    |
| Sidhartha | Brassica campestris | Crusiferae  |
| Suvaha    | Alpiniaofficinaruum | Scitaminae  |

**Table 3:** Materials required for UpanahaSweda:

*Poorva karma:* This includes preparation of Medicine and Patient for procedure.

## A. Preparation of Medicine for UpanahaSweda:

**Preparation of** *Choorna*: The classical drug *kottan-chukkadi* which is available from a GMP certified manufacturer was taken.

**Preparation of** *Kanji:* The liquor was prepared with *Manda* of half boiled rice kept for fermentation for 3 days.

#### **B.** Preparation of Patient:

**Purvakarma** : In *Purvakarma* the patient with calm and quiet mind who have followed the regimen of the day, patient was made to lie in supine position over the *Dhroni*. The effected pada where *Swedana* has to be performed was placed in suitable position. *Tilataila abhyanga* was done over *Gulpha predesha* for 10 minutes.

**Pradhana Karma:** After proper oleation of the diseased part, pradhana karma is performed. It includes the following steps, the powder kottanchukkadi are taken. After that, *Mahasneha, Kanji* are taken in prescribed quantity and are mixed to make paste this medicated paste is heated. When it attains *sukhoshna,* it is applied over the affected pada in a proper thick-

ness and covered with *Erandapatra* and tied with cotton cloth tightly. The *Upanaha* which is tied in the morning was removed at night and the *Upanaha* which is tied in the night was removed in morning.

*Paschat karma*: After removing of *bandhan*a, the part washed with warm water.

#### Method of Statistical Analysis

The study was designed to compare the efficacy of *Agnikarma* with suchi & *Upanaha* with *kottanchuk-kadi choorna* in *Vathakantaka*.Agni karma procedure is done in patients with *Vathakantaka*, for single sitting.and *Upanaha* procedure is done for continuous seven days. The assessment of Pain and Tenderness were done immediately after treatment, 7<sup>th</sup> day & 14<sup>th</sup> day.

The data were arranged in a master sheet and statistical tables were constructed. The improvements attained in the signs and symptoms were tested with the help of paired' t-test. Tables and Graphs were also drawn to signify the important findings. Comparison of effect of treatment in signs and symptoms before treatment, after treatment after 7<sup>th</sup> day & after 14<sup>th</sup> day were observed with the help of percentage.

| Table 4: Assessment of total effect of therapy |             |  |  |  |  |
|--|-------------|--|--|--|--|
| Complete remission                             | 100% relief |  |  |  |  |
| Marked improvement                             | 75% to 100% |  |  |  |  |
| Moderate improvement                           | 50% to75%   |  |  |  |  |
| Mild improvement                               | 25% to 50%  |  |  |  |  |
| No relief                                      | < 25%       |  |  |  |  |

 Table 4: Assessment of total effect of therapy

# **Observation And Results**

**Statistical analysis :** Total 30 patients were registered in this study. Out of that all 30 patients were studied in this project. 15 patients were in group A while 15 were in B group. Each patient was observed thoroughly and noted neatly. The observations are recorded and necessary charts and graphs were made.

| Sex    | No. of Pat | No. of Patients and Percentage |    |        |         |     |       |  |
|--------|------------|--------------------------------|----|--------|---------|-----|-------|--|
|        | Group A    | coup A Group B                 |    |        | Group A |     | Total |  |
| Male   | 4          | 26.67%                         | 5  | 33.33% | 9       | 30% |       |  |
| Female | 11         | 73.33%                         | 10 | 66.67% | 21      | 70% |       |  |

#### Table 5:: Distribution Of Patients Based On Sex.

## Table 6: Distribution of Patients Based on Age:

| Age in years | No. c | No. of Patients and Percentage |      |       |       |        |  |  |
|--------------|-------|--------------------------------|------|-------|-------|--------|--|--|
|              | Grou  | ір А                           | Grou | up B  | Total |        |  |  |
| 21-30        | 2     | 13.33%                         | 9    | 60%   | 11    | 36.67% |  |  |
| 31-40        | 4     | 26.67%                         | 0    | 0.00% | 4     | 13.33% |  |  |
| 41-50        | 3     | 20%                            | 3    | 20%   | 6     | 20%    |  |  |
| 51-60        | 6     | 40%                            | 3    | 20%   | 9     | 30%    |  |  |

#### **Table 7:** Distribution of Patients Based on Occupation:

| Occupation   | No. of P | No. of Patients and Percentage |   |         |    |        |  |  |  |
|--------------|----------|--------------------------------|---|---------|----|--------|--|--|--|
|              | Group A  | Group A                        |   | Group B |    |        |  |  |  |
| Housewife    | 8        | 53.33%                         | 2 | 13.33%  | 10 | 33.33% |  |  |  |
| Receptionist | 1        | 6.67%                          | 1 | 6.67%   | 2  | 6.67%  |  |  |  |
| Labour       | 2        | 13.33%                         | 2 | 13.33%  | 4  | 13.33% |  |  |  |
| Business     | 1        | 6.67%                          | 0 | 0.00%   | 1  | 3.33%  |  |  |  |
| Student      | 1        | 6.67%                          | 3 | 20.00%  | 4  | 13.33% |  |  |  |
| Teacher      | 1        | 6.67%                          | 2 | 13.33%  | 3  | 10.00% |  |  |  |
| Athlete      | 1        | 6.67%                          | 1 | 6.67%   | 2  | 6.67%  |  |  |  |
| Tapper       | 0        | 0.00%                          | 2 | 13.33%  | 2  | 6.67%  |  |  |  |
| Dancer       | 0        | 0.00%                          | 1 | 6.67%   | 1  | 3.33%  |  |  |  |
| Driver       | 0        | 0.00%                          | 1 | 6.67%   | 1  | 3.33%  |  |  |  |

**Table 8:** Distribution Of Patients Based By Aggravating Factor:

| Aggravating    | vating No. of Patients and Percentage |        |         |         |   |        |
|----------------|---------------------------------------|--------|---------|---------|---|--------|
| Factor         | Group                                 | Α      | Group B | Group B |   |        |
| Driving        | 0                                     | 0.00%  | 1       | 6.67%   | 1 | 3.33%  |
| Long Standing  | 0                                     | 0.00%  | 4       | 26.67%  | 4 | 13.33% |
| Cold Climate   | 1                                     | 6.67%  | 4       | 26.67%  | 5 | 16.67% |
| Excess Walking | 3                                     | 20%    | 3       | 20%     | 6 | 20%    |
| Early Morning  | 4                                     | 26.67% | 0       | 0.00%   | 4 | 13.33% |
| Body Weight    | 5                                     | 33.33% | 3       | 20%     | 8 | 26.67% |
| Night Time     | 2                                     | 13.33% | 0       | 0.00%   | 2 | 6.67%  |

| Duration of illness | No. of Patients and Percentage |        |    |        |    |        |
|---------------------|--------------------------------|--------|----|--------|----|--------|
|                     | Group A Group B Total          |        |    |        |    |        |
| BELOW 6 MONTHS      | 13                             | 86.67% | 13 | 86.67% | 26 | 86.67% |
| 6 MONTHS ABOVE      | 2                              | 13.3%  | 2  | 13.3%  | 4  | 13.3%  |

#### **Table 9:** Distribution Of Patients Based By Duration Of Illness:

#### **Table 10:** Distribution Of Patients Based On Weight:

| Weight   | No. o | No. of Patients and Percentage |      |        |       |        |  |  |  |
|----------|-------|--------------------------------|------|--------|-------|--------|--|--|--|
|          | Grou  | p A                            | Grou | ıp B   | Total |        |  |  |  |
| 41-50 KG | 1     | 6.67%                          | 3    | 20%    | 4     | 13.33% |  |  |  |
| 51-60 KG | 6     | 40%                            | 5    | 33.33% | 11    | 36.67% |  |  |  |
| 61-70 KG | 6     | 40%                            | 4    | 26.67% | 10    | 33.33% |  |  |  |
| 71-80 KG | 2     | 13.33%                         | 3    | 20%    | 5     | 16.67% |  |  |  |

## Results

# Effects of Agni Karma (Group-A)

#### Table 11: Effect of Group-A on Pain of Vatakantaka

| Symptom | Mean score | %                  | S.D (±) | S.E (±) | t value | p value |       |       |         |
|---------|------------|--------------------|---------|---------|---------|---------|-------|-------|---------|
|         | BT         |                    |         | BT-AT   | -       |         |       |       |         |
| Pain    | 2.40       | AT                 | 0.87    | 1.53    | 64      | 0.516   | 0.133 | 6.60  | < 0.001 |
|         |            | FU7 <sup>th</sup>  | 0.40    | 2.00    | 83      | 0.756   | 0.195 | 9.55  | < 0.001 |
|         |            | FU14 <sup>th</sup> | 0.33    | 2.07    | 86      | 0.798   | 0.206 | 10.02 | < 0.001 |

#### Effect onPain

In this work of 15 patients studied in *Vatakandaka* with Group-A Pain revealed are given in detail in Table No11. Statistical analysis showed that the mean

score which was 2.40 before the treatment was reduced to 0.87 after the treatment and after follow up it became 0.33 with 86% improvement and there is a statistically highly significant. (P<0.001)

 Table 12: Effect of Group-B on Pain of Vatakandaka

| Symptom | Mean | Mean score         |      |      |    | S.D (±) | S.E (±) | t value | p value |  |
|---------|------|--------------------|------|------|----|---------|---------|---------|---------|--|
|         | BT   |                    | BT-  |      |    |         |         |         |         |  |
|         |      |                    |      | AT   |    |         |         |         |         |  |
| Pain    | 2.40 | AT                 | 2.13 | 0.27 | 11 | 0.594   | 0.153   | 1.67    | >0.05   |  |
|         |      | FU7th              | 1.47 | 0.93 | 39 | 0.594   | 0.153   | 4.99    | < 0.001 |  |
|         |      | FU14 <sup>th</sup> | 0.87 | 1.53 | 64 | 0.639   | 0.165   | 8.20    | < 0.001 |  |

#### **Effect onPain**

In this work of 15 patients studied in *Vatakandaka* with Group-B on Pain revealed are given in detail in Table No.12 . Statistical analysis showed that the

mean score which was 2.40 before the treatment was reduced to 0.27 after the treatment and after follow up it became 0.87 with 64% improvement and there is a statistically significant change. (P<0.001)

| Symptom    | Mean | score              |      |       | %  | S.D (±) | S.E (±) | T value | p value |  |
|------------|------|--------------------|------|-------|----|---------|---------|---------|---------|--|
|            | BT   |                    |      | BT-AT |    |         |         |         |         |  |
| Tenderness | 2.20 | AT                 | 1.87 | 0.33  | 15 | 0.488   | 0.126   | 1.95    | < 0.05  |  |
|            |      | FU7th              | 0.87 | 1.33  | 61 | 0.488   | 0.126   | 7.80    | < 0.001 |  |
|            |      | FU14 <sup>th</sup> | 0.47 | 1.73  | 79 | 0.458   | 0.118   | 10.14   | < 0.001 |  |

# **Effect on Tenderness**

An assessment of Tenderness in patients of *Va-takandaka* before and after the treatment with Group-A showed reduction in the mean score from 2.20 to

1.87 after the treatment and after follow up it became 0.47 with 79% improvement. It is found to be statistically highly significant(P < 0.001). The details are shown with statistical data in Table No.13

Table 14: Effect of Group-B on Tenderness of Vatakandaka

| Symptom    | Symptom Mean score |                    |      | %     | S.D (±) | S.E (±) | T value | p value |         |
|------------|--------------------|--------------------|------|-------|---------|---------|---------|---------|---------|
|            | BT                 |                    |      | BT-AT | -       |         |         |         |         |
| Tenderness | 1.87               | AT                 | 1.73 | 0.13  | 7       | 0.352   | 0.091   | 0.65    | >0.05   |
|            |                    | FU7th              | 1.40 | 0.47  | 25      | 0.516   | 0.133   | 2.21    | < 0.05  |
|            |                    | FU14 <sup>th</sup> | 0.53 | 1.33  | 71      | 0.900   | 0.232   | 6.27    | < 0.001 |

## **Effect on Tenderness**

An assessment of Tenderness in patients of *Va-takandaka* before and after the treatment with Group-B showed reduction in the mean score from 1.87 to

1.73 after the treatment and after follow up it became 0.53 with 71% improvement. It is found to be statistically significant(P<0.001). The details are shown with statistical data in Table 14 .

## Assessment of Total Effect of Therapy

Table 15: Overall effect of Agni Karma Group-A

#### **Result on group A**

| Class     | Grading              | No of patients |  |
|-----------|----------------------|----------------|--|
| 0-24%     | No Improvement       | 0              |  |
| 25% -49%  | Mild Improvement     | 0              |  |
| 50% - 74% | Moderate Improvement | 5              |  |
| 75% - 99% | Marked Improvement   | 2              |  |
| 100%      | Complete Remission   | 8              |  |

## Effects Ofupanaha Sweda (Group-B)

Assessment Of Total Effect Of Therapy

 Table 16: Overall effect of Group-B

| Effect Of Treatment In Group - B |                      |                |  |  |  |  |  |
|----------------------------------|----------------------|----------------|--|--|--|--|--|
| Class                            | Grading              | No of patients |  |  |  |  |  |
| 0-24%                            | No Improvement       | 0              |  |  |  |  |  |
| 25% -49%                         | Mild Improvement     | 3              |  |  |  |  |  |
| 50% - 74%                        | Moderate Improvement | 6              |  |  |  |  |  |
| 75% - 99%                        | Marked Improvement   | 4              |  |  |  |  |  |
| 100%                             | Complete Remission   | 2              |  |  |  |  |  |

| Characteristics    | Group | Group-A |            |    |            | Group-B |              |  |  |  |
|--------------------|-------|---------|------------|----|------------|---------|--------------|--|--|--|
| Signs and Symptoms | Mean  | score   | Percentage | of | Mean score |         | Percentage o |  |  |  |
|                    | BT    | FU      | relief     |    | BT         | FU      | relief       |  |  |  |
| Pain               | 2.40  | 0.33    | 86         |    | 2.40       | 0.87    | 64           |  |  |  |
| Tenderness         | 2.20  | 0.47    | 79         |    | 1.87       | 0.53    | 71           |  |  |  |

Table 17: Comparative results of Group-A and Group-B

**Result of group A** - The percentage of improvement in Group A on Pain is 86% and Tenderness is 79%. **Result of group B** - The percentage of improvement in Group B on Pain is 64% and Tenderness is 71%.

| Group A | Group B | Mean Difference | SE (±) | T value | P value |
|---------|---------|-----------------|--------|---------|---------|
| 83      | 65.11   | 17.89           | 6.91   | 2.35    | < 0.05  |

## Comparative results of Group A and Group B

Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with unpaired t test. The test shows that the treatment is statistically significant in Group A when compared to Group B. Group A overall result is 83% and Group B overall result is 65.11%.

## DISCUSSION

Discussion is the main step in any research. To reach up to the depth of the knowledge discussion is the important step which helps in under standing the subject and guides to conclusive judgment. This section analyzes disease review, treatment review, observations and results.

**Discussion On** *Vatakantaka- Acharya Sushrutha* gives the description of *Vatakantaka* under *Vatavyad- hi* chapter. The features of *Vatakantaka* are severe pain in the *pada* and ankle joint caused by the improper placement of the feet on the ground while walking which leads to vitiation of *vatadosha* in the region of the heel and causes severe pain.

**Comparision of Disease With Mordern Aspect**-Some have the opinion that *kantaka* mentioned in Ayurvedic references should be correlated with spur, which means that there is a thorny growth. But *kantaka* can be considered as that which is troublesome or that which gives trouble as mentioned in Sanskrit English dictionary. It can be concluded that *Vatakantaka* need not be correlated with any one particular disease of modern science based on symptom "**Painfull Heel**" or the condition in which pain is the main symptom in heel can be considered as *va-takantaka*. Various diseases can come under the heading *vatakantaka* example are- Achilles' tendinitis, plantar fasciitis, pesplanus(flat foot), tendoachillis bursitis, retrocalcaneum bursitis apophysitis of calcaneum (sever's disease) and calcanean spur

**Discussion On** *Agnikarma* **And** *Upanaha Agnikarma*- The treatment procedure done with the help of *Agni*. It is application of high heat over a point of the body for a very short duration of time. In the present study, *Agnikarma* a Para surgical procedure has been taken to establish its efficacy. For this a conical sharp tipped *suchi* (needle) is used. And *Upanaha* is the second treatment as *Acharya Sushruta* suggests *Snehana, Upanaha, Agnikarma, Bandhana, Unmardana* as remedy for *Vatakantaka* and the *Upanaha* is done with *kottamchukkadi choorna* 

**Discussion On Results** -Patients who attended the O.P.D and I.P.D, Department of *Shalyatantra* of K.V.G Ayurveda Medical College and Hospital, Sullia, during the period having the complaints of *shoola* at *pada* region were screened. Among them 30 patients fulfilling the inclusion criteria of the present study were taken. Detailed history taking and physical examinations were carried out in these patients. Relevant data along with the elaborate assessment of Pain, Tenderness were registered in the designed case Performa.

#### Analysis of Results

## Effects Of Agni Karma (Group-A)

**Effect on Pain -** Group-A - In this work of 15 patients studied in *Vatakandaka* with Group-A .Statistical analysis showed that the mean score which was 2.40 before the treatment was reduced to 0.87 after the treatment and after follow up it became 0.33 with 86% improvement and there is a statistically highly significant.

Effect on Tenderness- Group-A- An assessment of Tenderness in patients of *Vatakandaka* before and after the treatment with Group-A showed reduction in the mean score from 2.20 to 1.13 after the treatment and after follow up it became 0.47 with 79% improvement. It is found to be statistically highly significant(P<0.001).

# Effect Of Upanaha Group-B

**Effect on Pain -** Group-B - In this work of 15 patients studied in *Vatakandaka* with Group-B on Pain Statistical analysis showed that the mean score which was 2.40 before the treatment was reduced to 1.53 after the treatment and after follow up it became 0.87 with 64% improvement

**Effect on Tenderness -** An assessment of Tenderness in patients of *Vatakandaka* before and after the treatment with Group-B showed reduction in the mean score from 1.87 to 1.2 after the treatment and after follow up it became 0.53 with 71% improvement

#### Assessment Of Total Effect Of Therapy

**Result of group** A - The percentage of improvement in Group A on Pain is 86% and Tenderness is 79%.

**Result of group B** - The percentage of improvement in Group B on Pain is 64% and Tenderness is 71%.

## **Comparative Results Of Group A And Group B**

Comparative analysis of the overall effect of the treatments in both the groups was done. The test shows that the treatment is statistically significant in Group A when compared to Group B. Group A overall result is 83% and Group B overall result is 65.11%.

# CONCLUSION

In the present study, both *Agnikarma with su-chi&Upanaha* with *kottamchukkadichoorna* are found effective in *Vatakantaka*. In which overall the group A is more effective clinically and statistically than group B in almost all the parameters. And the findings are *Agnikarma with suchi* found to be more effective than *Upanaha Sweda*. It is benifical, safe, and eco-

nomical and also helps in relieving pain much faster. *Agni karma* gives quick result in symptoms, while *Upanaha Sweda* gives gradual effect. Comparative analysis of the overall effect of the treatments in both the groups shows that the treatment is statistically significant in Group A when compared to Group B. Group A overall result is 83% and Group B overall result is 65.11%. This study should be done on large samples with lengthy follow up so that definite conclusions can be drawn as the present study is limited to small sample of 30 patients.

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