

## A COMPARATIVE CLINICAL STUDY ON THE EFFECTIVENESS OF UDVARTANA WITH SIRAVYADHA IN THE MANAGEMENT OF SIRAJAGRANTHI (VARICOSE VEIN)

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### ABSTRACT

Varicose vein of the lower limbs is one of such clinical condition that hampers the beauty of the legs. It is a very common condition, affecting up to three in 10 adults. Varicose veins affect up to 25% of women and 15% of men. By the age of 50, nearly 40% of women and 20% of men have significant vascular problems. The lifestyle changes, obesity, occupational pattern of prolonged standing and pregnancy are considered to be significantly contributing to this situation. *Siravyadha*, which is one among the types of *Sasastra Raktamokashana* is mentioned in the treatment of *Sirajagranti* in our classics. It is considered as *Ardha Chikitsa* of *Shalyatantra* and is said to provide immediate results. *Udvardana* which is having *Vatakaphahara Twakprasadana* and *Siramukhavivechana* property is said to be effective in *Sirajagranti*. Also, the procedure is done in *Pratiloma* (upward) direction which results in *Dridikarana* of *angas* by toning them and relieves the symptoms of varicose vein. Hence an effort was made to evaluate the effect of *Siravyadha* by *Vrihimukha Sastra* and *Udvardana* with *Kolakulathadi Churna* in the management of *Sirajagranti* (varicose vein), this study was planned with the following aims. **Objective:** A detailed

study on *Sirajagranthi* and its Management. To study the effect of *Udvartana* with *Siravyadha* in *Sirajagranthi* (varicose veins). To study the effect of *Siravyadha* in *Sirajagranthi* (varicose veins)., To compare the efficacy of both in *Sirajagranthi* (varicose veins). **Method:** The outcome of the study is evaluated clinically on a minimum of 60 patients with *Sirajagranthi*, divides 2 groups A and B. Group A received *Udvartana* for 7days and then *Siravyadha* on 8<sup>th</sup> day. Group B received *Siravyadha* for 1 day and followed by *Pathya* for 7days. The duration of study was 28days in both the groups and observations were made on before and after the treatment (0<sup>th</sup>, 8<sup>th</sup> and 28<sup>th</sup> day). Data obtained was statistically analysed and interpreted. **Results:** The results were assessed based on the relief obtained to the subjective and objective parameters and was taken for consideration for the study and were found statistically significant on all the parameters ( $p < 0.05$ ). **Conclusion:** From the study it is evident that effectiveness of *Udvartana* along with *Siravyadha* is more significant in reducing the signs and symptoms of *Sirajagranthi*.

**Keywords:** *Sirajagranthi*, *Udvartana*, *Siravyadha* etc.

## INTRODUCTION

The science of life, *Ayurveda* has mentioned various principles for the wellbeing of living beings. The main aim of *Ayurveda* is to maintain the health and cure the disease. Thus, it can be seen in both maintenance of health and curing of diseased is given equal importance. Healthy body and a healthy mind make man a master in the art of happy living.

Today man is totally involved in achieving high standards of living to achieve a good pleasant life and as competition exist in every field; one has to work very hard beyond his physical capacity and mental limits of power. All these things affect inversely the health of the people. Today, a lot of occupation and professions have sprung up where a person is required to either constantly stand up for a long time or made to sit with legs hanging down for a considerable time.

Varicose vein one of the commonest diseases in surgical practice. It occurs in people who are habitual to standing for long periods. It is a very common condition, affecting up to three in 10 adults [1]. Varicose veins affect up to 25% of women and 15% of men. By the age of 50, nearly 60% of women and 20% of men have significant vascular problems [2]. The lifestyle changes, obesity, occupational pattern of prolonged standing and pregnancy are considered to be significantly contributing to this situation [3].

Abnormally dilated elongated and tortuous alteration in the saphenous veins and their tributaries is called as varicose vein. Varicose veins of the lower limbs are the

penalty the human being has to pay for its erect posture [3]. Its main reasons are hereditary factors, prolonged standing, heavy weightlifting, multiple pregnancies, high blood pressure and obesity. It may later lead to complications like pigmentation, ankle flare, itching over the varicosities, eczema, ulceration etc [3]. People rarely consider this condition unless complications like these arises, which makes the treatment a challenge to the doctors. Attending this condition in early stages either as a part of beauty concern or otherwise gives more scope for early treatment or to prevent the development of skin changes and other complications.

*Sirajagranthi*<sup>[4,5,6]</sup> which can be co-related to varicose vein is described as due to *Vataprakopaka Nidanas* like physical exertion and straining, *Vayu* enters the *Sira* causing *Sampeedana*, *Sankocha* and *Vishoshana* and produce *Granthi* formation in *Sira* which is non-pulsating and painless. *Siragatavata*<sup>[6]</sup> produces *Shoola*, *Akunchana* and *Purana* of *Sira*.

*Rakthamokshana* is the treatment of choice prescribed by the classics for *Sirajagranthi*<sup>[6]</sup> along with *Sneha*, *Abhyanga*, *Upanaha*, *Mardhana* and *Alepana*. *Siravyadha*, which is one among the types of *Sasastra Rakthamokashana* is mentioned in the treatment of *Sirajagranthi* in our classics. It is considered as *Ardha Chikitsa of Shalya Tantra* and with *Siravyadha* 'the diseases perish by root, just as when the water bunds are removed, the rice and other crops are destroyed<sup>[7]</sup>. Among the different techniques for *Siravyadha*, *Vri-*

*himukha Shastra* is indicated in muscular or fleshy areas and *Kutharika Shastra* for puncturing veins on the bones<sup>6</sup>. Here *Vrihimukha Shastra* is taken for the study. *Udvartana* is a procedure of applying powders of herbs to the skin and rubbing it to form wicks with gentle strokes directing towards heart, with the palm evenly spread on the surface of the skin. While understanding the process of '*Udvartana*' through the *Samhita*, it is observed that there are various words used to explain the meaning of '*Udvartana*'. It helps to maintain *Prakrutatva* of *Vayu* by pacifying increased or vitiated *Vayu*. It decreases the fat and *Vikruta Kapha*. It cleans and provides smoothness to the skin and firmness to the body. *Udvartana*<sup>8]</sup> which is having *Vatakaphahara Twakprasadana* and *Siramukhavivechana* property is said to be effective in *Sirajagranthi*. Also, the procedure is done in *Pratiloma* (upward) direction which results in *Dridikarana* of *Angas* by toning them and relieves the symptoms of varicose vein.

So, in the present study, an effort was made to explore the effect of *Siravyadha* by *Vrihimukha Sastra* and *Udvartana* with *Kolakulathadi Churna* in the management of *Sirajagranthi* (varicose vein).

#### Materials and Methods:

##### a. Source of Data:

- 1 **Literary source:** All the classical, modern literatures and contemporary texts including the websites about the disease and the drug was reviewed and documented in the present study.
- 2 **Drug source:** Raw drugs required were identified and selected from the local market and the preparation of *Udvartana Choorna* was done in the Karnataka Ayurved Medical college hospital.
- 3 **Sample source:** 60 patients diagnosed as *Sirajagranthi* were selected and were grouped into two Groups A & B irrespective of their age, sex, religion, socio economic status etc. Each patient was selected for the trial after voluntary consent.

##### b. Method of collection of data:

**Sample size:** 60 patients diagnosed as *Sirajagranthi* were divided into two equal groups- Group A and Group B for the study.

**Study design:** Comparative clinical study.

**Selection Criteria:** The cases were selected strictly as

per the pre-set inclusion and exclusion criteria.

##### c. Diagnostic criteria

- Clinical features of *Sirajagranthi* (varicose vein) viz. *Sampeedana*, *Samkochana* and *Vishoshanam* of *Siras* (dilated, elongated and tortuous veins) will be taken as the criteria for diagnosis.
- Brodie -Trendelenburg test
- Multiple Tourniquet test
- Perthes test
- Modified Perthes test

##### d. Inclusion criteria

- Patient aged between 20-60 years of either sex.
- Patient suffering from Primary and secondary varicose vein.
- Patient with *Sirajagranthi* (Varicose vein) in lower limb only.
- Patient indicated for *Siravyadha* and *Udvartana*.

##### e. Exclusion criteria

- Patient with Chronic systemic diseases.
- Patient with coagulopathy or bleeding diseases.
- Varicosity associated with complications like deep vein thrombosis, calcification, equines deformity, venous ulcer.
- *Siravyadha Anarhas* & *Udvartana Anarhas*

**f. Investigations:** Following lab investigations will be performed for the diagnosis and to rule out major pathological conditions:

- Hb%
- Blood sugar
- CT and BT
- Any other investigations if necessary.

#### Procedure and design of the study:

##### Materials and methods:

- *Snigdha Yavagu*, *Moorchita Tilathaila*, *Nadee Swedana Yantra*, *Vrihimukha Sastra*, adhesive plaster, kidney tray, antiseptic lotion, Bandaging role, Distilled water and Measuring glass
- *Kolakulathadi Churna*

##### Design of study:

**Group- A:** 30 patients was managed with *Udvartana* with *Kolakulathadi* for 7 days followed by *Siravyadha* on 8<sup>th</sup> day

Drugs Required: *Kolakulathadi Churna*

Site: lower limbs

Period: 7days

**Procedure**

**1. Poorva Karma**

**Preparation of the Medicine:**

The material and medicines needed for the treatment were collected beforehand.

**Preparation of the Patient:**

The patient was thoroughly examined and the *Prakruthi*, *Vikruti* were documented in detail.

**2. Pradhana Karma:**

Patient was asked to lie down on the massage table comfortably. *Udvartana* to be done simultaneously and synchronously done on both the side of lower extremities in prone position over the period of 20 minutes.

**3. Paschat Karma**

After the procedure wiped off the medicament on the body. Patient was adviced to take warm water bath and follow the *Pathya* and *Apathya* *Siravyadha* was done on 30 patients of Group A after *Udvartana*.

**Materials Required:**

*Snigdha Yavagu*, *Moorchita Tila Thaila*, *Nadee Swedana Yantra*, *Vrihimukha Sastra*, adhesive plaster, kidney tray, antiseptic lotion, Bandaging role, Distilled water and Measuring glass

Site: Maximum tortuous area was selected for the *Siravyadha*.

*Poorva Karma*: *Snigdha Yavagu* was given to the patient, and after 1-hour *Abhyanga* with *Moorchita Tila Talia* and *Nadi Swedana* was given to the area in which *Siravyadha* was meant to be done.

*Pradhana Karma*: Tourniquet was tied above the site of *Siravyadha* and *Raktamokshana* was carried out using *Vrihimukha Sastra* (I.V. cannula of size 18 or butterfly cannula is used)

*Paschat Karma*: After the complete stoppage of bleeding loose bandage was applied. The food or diet, which

was neither hot nor cold and was light, which could be easily digested, and that which stimulates the digestion was recommended. Advised the patient to have *Ksheera* along with *Guda*.

**Group B:** 30 patients were managed with *Siravyadha*. Site: Maximum tortuous area was selected for the *Siravyadha*.

*Poorva Karma*: *Snigdha Yavagu* was given to the patient, and after 1-hour *Abhyanga* with *Moorchita Tila Thaila* and *Nadi Swedana* was given to the area in which *Siravyadha* was meant to be done.

*Pradhana Karma*: Tourniquet was above the site of *Siravyadha* and *Raktamokshana* was carried out using *Vrihimukha Sastra*.

*Paschat Karma*: After the complete stoppage of bleeding loose bandage was applied. The food or diet, which was neither hot nor cold and is light, which could easily digest, and that which stimulates the digestion was recommended. Advised the patient to have *Ksheera* along with *Guda*.

**Assessment Criteria:**

Assessment of the condition was done based on a detail proforma adopting different methods of scoring of subjective and objective parameters and was analysed statistically.

Following scoring pattern was adopted for the study to observe the changes in the signs and symptoms.

**Subjective Parameters:**

- 1) Pain
- 2) Itching sensation

**Objective Parameters**

- 1) Swelling
- 2) Pigmentation.

Effect of treatment was assessed statistically on the basis of gradation of both subjective and objective parameters before and after treatment.

**Table 1:** Showing Grading of Subjective and Objective parameters

	Parameters/Grading	0	1	2	3	4	5
1	PAIN (McGill pain score index)	None	Mild	Discomforting	Distressing	Horrible	Excruciating
2	Itching Sensation	No itching	Occasional itching over varicosal area	Continuous itching sensation	Nil	Nil	Nil

			of leg				
3	Swelling	No localized swelling	Swelling present after long exertion	Swelling present on standing posture	Swelling present throughout	Nil	Nil
4	Pigmentation	No discoloration	Reddish discoloration	Reddish blue discoloration	Total blackish discoloration with scaling	Nil	Nil

**Observations and Results:** Higher incidence of *Sirajagranthi* was reported in age Group of 41-50 years. Out of 60 patients from group A and group B 53.33% patients were belong to the age group of 41-50 years, 23.33% were belong to the age group of 51-60, 18% were belong to 31-40 and 5% belongs to 21-30 age group. Out of 60 patients from group A and group B 34(56.67%) patients were male and 26(43.33%) are females. Out of 60 patients from group A and group B 68.33% are belongs to Hindu religion, 18.33% belongs to Muslim religion and 13.34% belongs to Christianity. Out of 60 patients from group A and group B 73.33% belongs to Middle class, 16.67% belongs to High class and 10% belongs to poor class. From the study, out of 60 patients from group A and group B 50% patients belongs to strenuous category, 33% belongs to moderate category and 16.67% belongs to sedentary group. Out of 60 patients from group A and group B 93.33% are married and 6.67% are unmarried. Out of 60 patients from group A and group B 80% have mixed diet and 20% are vegetarian.

Out of 60 patients from group A and group B 75% have regular bowel habit, 15% have irregular bowel habit and 10% have constipated bowel habit. Out of 60 patients from group A and group B, 33.33% belongs to 71-80 kg, 28.33% belongs to 61-70kg, 18.33% belongs to 51-60kg, 13.33% belongs to 41-50kg and 6.67% belongs to 81-90kg. From the study, out of 60 patients the duration of 95% cases have duration more than 1 year and only 5% have the duration of below 1yr. Out of 60 patients from group A and group B, in 86% cases varicose vein is present in both legs, 11% cases have varicose vein in right lower limb and 9% cases affected with varicose vein in left limb only.

**Results:** The observations procured on the assessment parameters of 60 patients before treatment (BT) and 28<sup>th</sup> day (AT) in Group A and Group B were statistically analysed to determine the effect of the treatment *Udwarthana* followed by *Siravyadha* in Group A and *Siravyadha* in Group B.

**Table 2:** Effect on Group A (subjective and objective parameter)

SYMPTOM	MEAN SCORE			%	SD (±)	SE (±)	Z Score	p- VALUE
	BT	AT	X= BT-AT					
Pain	2.6	0.9	1.7	85	0.6103	0.1114	4.2889	<0.05
Itching sensation	1.5	0.2	1.3	65	0.6513	0.1189	4.0792	<0.05
Swelling	2.06	0.6	1.4667	40	0.5713	0.1043	4.802	<0.05
Pigmentation	1.366	0.4	0.97	48.33	0.585	0.0895	4.62	<0.05

**Table 3:** Effect on Group B (subjective and objective parameter)

SYMPTOM	MEAN SCORE			%	SD (±)	SE (±)	Z Score	p- VALUE
	BT	AT	X= BT-AT					
Pain	3	1.9	1.1	55	0.5307	0.0969	4.2889	<0.05
Itching sensation	1.46	0.8	0.6667	33.33	0.5467	0.0998	4.08	<0.05
Swelling	1.9	1.26	0.6333	31.66	0.4901	0.0895	4.802	<0.05
Pigmentation	1.76	0.933	0.8333	41.66		Pigmentation	1.76	0.933



**Table 4:** Comparative Effects of Treatment between Two Groups

Signs and Symptoms	Group A (Mean Score)	Group B (Mean Score)	Z-Value of Mann Whitney	U Value	P Value
Pain	1.7	1.1	3.119	238.5	<0.05
Itching Sensation	1.3	0.6667	3.119	233.5	<0.05
Swelling	1.4667	0.6333	4.317	157.5	<0.05
Pigmentation	0.97	0.8333	4.72	212.5	=0.05

**Table 5:** Comparative Percentage of Relief between Group- A & Group- B

Signs & Symptoms	Mean Difference		Percentage Relief %	
	Group A	Group B	Group A	Group B
Pain	1.7	1.1	85	55
Itching Sensation	1.3	0.6667	65	33.33
Swelling	1.4667	0.6333	40	31.66
Pigmentation	0.97	0.8333	48.33	41.66

Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with Mann Whitney test. The test shows that the treatment is significant in Group A when compared to Group B. Group A overall result is 52.915% and Group B overall result is 41.245%.

## DISCUSSION

### Discussion on Review of Literature

*Sirajagranthi* is one among the *Granthi Rogas* which is explained in the classics, denotes a pathological condition characterised by an elevated, quick developing and round swelling of veins, which are non-

pulsating and painless. It would have given a clear-cut picture of the varicose vein if there is a clear description of its related anatomy and pathology.

So, the above-mentioned symptoms, shows that *Sirajagranthi* can be correlated to varicose vein, though the concept of *Siragata Vata*, *Vatasonita*, *Avarana* concepts etc. can be borrowed for the management due to the involvement of *Vata* and *Rakta* in its *Samprapti*.

The disease *Sirajagranthi* is described in the context of *Granthi-Apachi-Arbuda-Galaganda* chapter by *Sushrutha* and *Vagbhata*.

**Table 6:** Correlation between *Sirajagranthi* and Varicose vein

	<i>Sirajagranthi</i>	Varicose vein
Involved structure	<i>Sira</i>	Veins
Symptoms	<i>Sampeedya, Nisphuram, Nirujam</i>	Diffuse dull aching pain
Signs	<i>Samkochya, Vrutta, Unnatha, Vakrikriya, Shopham</i>	Dilated, elongated, and tortuous veins

The pathology of varicose veins are, under normal conditions the blood from the superficial venous system is passed to the deep veins through the competent perforators and from deep veins the blood is pumped up to the heart by the muscle pump, competent valve and negative intrathoracic pressure. But if this mechanism breaks down, either due to destruction of valves of the deep veins, or of the superficial venous system, the blood becomes stagnated in the superficial veins

which become the pray of high pressure leaks and thus becomes distended and tortuous and become varicose veins.

The main aim of the treatment in contemporary science is to strengthen the veins walls and valves and muscles, to achieve good venous flow from the lower extremities and to avoid the complications of varicose veins. The treatment explained in the classics serves the above aim of the treatment.

## Discussion on Results

**Overall effect of treatment:** In Group A, the effect of *Siravyadha* done after *Udwarthana* as *Purvakarma* in signs and symptoms of *Sirajagranthi* as assessed on before and after treatment showed better improvement in clinical conditions and which was statistically more significant changes than group B.

**Effect on Pain:** In group A, out of 30 patients, the mean score of pain before treatment was 2.6 which was reduced to 0.9 on 28th day after *Udwarthana* with *Siravyadha* with 85% improvement. This revealed a statistically more significant effect of *Siravyadha* done after *Udwarthana* on *Shoola* at  $p < 0.05$

As *Sirajagranthi* is a result of vitiated *Vata* along with stagnation of vitiated *Rakta* causes pain in legs. After the treatment of *Udwarthana* along with *Siravyadha* the relief of pain may be due to the bringing back of *Vata* into normalcy by *Udwarthana* and *Nirharana* of the *Sesha Dosha* along with *Dushta Rakta* by *Siravyadha*.

The pain is caused by the tortuous veins which further stimulates release of neurotransmitter (P substance) which gets collected in the smooth muscles of the blood vessels. And also, there is venous hypertension which results in stretching of veins causing the pain. As *Udwarthana* followed by *Siravyadha* tones the muscles, removes the stasis due to the removal of stagnant vitiated blood which in turn washes away the P substance and reduces the intravascular pressure.

In Group B, out of 30 patients, the mean score of pain before treatment was 3 which was reduced to 1.9 on 28th day after *Siravyadha* with 55% improvement. This revealed a statistically significant effect of *Siravyadha* on pain at  $p < 0.05$ . Vitiated *Vata* is a factor for causing pain because it causes *Sampeedana* of veins. After *Raktamokshana*, relief of pain may be due to *Nirharana* of the *Vata* along with *Dushta Rakta*.

### Effect on Itching Sensation

In Group A, out of 30 patients, the mean score of itching sensation before treatment was 1.5 which was reduced to 0.2 on 28<sup>th</sup> day after *Udwarthana* with *Siravyadha* with 65% improvement. This revealed a statistically more significant effect of *Siravyadha* done after *Udwarthana* on itching sensation  $p < 0.05$ . As due to stasis of blood in varicose veins, Extravasation and

break down of R.B.C in the lower part of the leg stimulates histamine to deposit at the site which causes vasodilatation and vascular permeability and itching. As there is the involvement of vitiated *Rakta*, *Vikruta Kapha* and vitiation of *Mamsa* and *Medas*, by *Udwarthana* the stasis of blood can be removed from the site and it also stimulates the pumping action of veins by giving strength to muscles which further avoid the breakdown of RBC and results in reduction in itching sensation and after *Siravyadha* it removes the stasis due to the removal of remaining stagnant vitiated blood which in turn washes away the stagnated blood and histamine.

In Group B, out of 30 patients, the mean score of itching sensation before treatment was 1.46 which was reduced to .8 on 28th day after *Siravyadha* with 33% improvement. This revealed a statistically significant effect of *Siravyadha* on itching sensation at  $p < 0.05$ . *Siravyadha* acts on itching sensation by removing the stagnated blood from the *Sira* that removes the *Sanga* from the *Srotas*.

### Effect on Swelling

In Group A, out of 30 patients, the mean score of Swelling before treatment was 2.06 which was reduced to 0.6 on 28<sup>th</sup> day after *Udwarthana* with *Siravyadha* with 40% improvement. This revealed a statistically more significant effect of *Siravyadha* done after *Udwarthana* on Swelling  $p < 0.05$ . Swelling is due to venous outlet obstruction which increases capillary hydrostatic pressure and cause collection of tissue fluid. Due to *Vatakaphahara* and *Siramukhahavechana* property of *Udwarthana* along with *Tridosahara* and *Shothahara* properties of drugs results in relieving of intravascular pressure which further results in subside the swelling.

In Group B, out of 30 patients, the mean score of swelling before treatment was 1.9 which was reduced to .126 on 28th day after *Siravyadha* with 31% improvement. This revealed a statistically significant effect of *Siravyadha* on swelling at  $p < 0.05$ . *Siravyadha* helps to relieve the intravascular pressure and helps to subside the swelling.

### Effect on Pigmentation

In Group A, out of 30 patients, the mean score of Pigmentation before treatment was 1.36 which was reduced to 0.4 on 28<sup>th</sup> day after Udwarthana with Siravyadha with 48.33% improvement. This revealed a statistically more significant effect of Siravyadha done after Udwarthana on Pigmentation  $p < 0.05$ . Discoloration is mainly seen in the lower part of the leg due to hemosiderin deposition from breakdown of RBC which have come off the thin walled veins. Due to Vranahara, Raktaprasadana property of drugs and due to overall effect of Udwarthana with Siravyadha, the stagnated blood get flow out from the site results in the entry of fresh blood and supplement of nutrients results in reduction of pigmentation.

In Group B, out of 30 patients, the mean score of pigmentation before treatment was 1.76 which was reduced to 0.93 on 28<sup>th</sup> day after Siravyadha with 41.6% improvement. By Siravyadha, due to removal of stagnated blood i.e. dead RBC along with iron in the form of hemosiderin from the veins occurs which helps to reduce the pigmentation.

#### a) Discussion on comparative Percentage relief of Group A and Group B

- **Pain** - In Group A 85% of relief and Group B 55% relief was observed.
- **Itching Sensation** - In Group A 65% of relief and Group B 33.3% relief was observed
- **Swelling** - In Group A 40% of relief and Group B 31.6% relief was observed
- **Pigmentation** - In Group A 48.3% of relief and Group B 41.6% relief was observed

Thus, Siravyadha done after Udwarthana showed more significant results in the symptoms like pain, itching sensation, swelling and pigmentation.

Thus, the total effect of Siravyadha done after Udwarthana was better than Siravyadha done without Udwarthana.

#### Mode of Action of The Procedures

##### A) Mode of action of Siravyadha

Raktamokshana invariably results in immediate repair when compared to other therapeutic procedures which takes longer duration to reduce the symptoms.

**“Siravyadham Ardha Chikitsa Shalyatantre Prakirtitah”**

Siravyadha is considered as *Ardha Chikitsa* or it is considered as the complete treatment in some of the surgical diseases. The role and importance of *Rakta* in the genesis, manifestation and progress of the disease are not being given due emphasis resulting in overall poor rating over the process *Raktamokshana* as a radical treatment. There is considerable involvement of *Rakta* and its *Upadhatu*-s in the genesis, manifestation and progress of condition with respect to varicose veins. *Siravyadha* is one such kind of radical treatment which helps to remove the *Dushtarakta*.

As *Siravyadha* is a type of *Shastravacharaniya Raktamokshana* procedure, two *Shashtra* have been mentioned in classics for *Vyadhana* purpose. One is *Vrihimukha Shashtra* and the other is *Kutharika Shashtra*, former to be used in *Mamsala Pradesa* and later in *Asthi Pradesa*. In the present study *Siravyadha* was carried out using *Kutharika Shashtra*. By using *Vrihimukha* large amount of vitiated blood can be removed from the maximum tortuous area which gives more symptomatic relief. *Siravyadha* is a simple procedure and can be practiced even in OPD levels.

#### 1. Probable mode of action of Siravyadha

- In the disease *Sirajagranthi*, the main vitiated factors are *Vata* and *Rakta*. By doing *Siravyadha*, the stagnant vitiated *Rakta* gets drained out which will help to retain the *Chala Guna of Vata*.
- By removing the stagnant vitiated blood that had caused *Sanga*, *Siravyadha* reduces intravascular pressure and volume hence relieving *Shoola* and *Shotha*.
- Since the stagnant blood is drained out, the breakage of RBC gets reduced which in turn reduce the pigmentation and itching over the part.
- Vitiated *Vata* in *Sira* causes *Siraakunchana* (dilatation of the veins) and stimulate release of substance P which gets collected in smooth muscle of blood vessels causing pain.
- After doing *Siravyadha*, this is removed from the blood thus causing relief in pain.
- *Vata Shamana* is also done by *Snigdha Ahara* which is given at the time of *Paschat Karma*.

There is considerable role of *Rakta* and its *Upadhatu* in the genesis, manifestation and progress of the con-



dition with respect to varicose veins. *Siravyadha* is one such radical treatment especially concerned with *Dushta Rakta Nirharana* (the macroscopic removal of morbid blood from unwanted contexts or situations.) Patho-physiological studies suggests that in case of a considerable blood loss (>100ml), the immediate haemodilution stimulates or triggers a host of beneficial physiological mechanisms making the body alert and adaptive to take care of various systemic challenges present and those cross the body in the near future.

*Shonitha Kleda* is one among the *Pitta Nanatmaja Vikara* here *Kleda* refers to multiple intermediate metabolites particle which embedded in *Rakta* which triggers skin changes, oedema hence *Raktamokshana* by *Siravyadha* is an attempt to reduce the *Kleda* in *Rakta*. Even more “*Raktam hi Amlatam hi thatha charuk*” - *amlata in Rakta* (inflammatory markers, intermediate metabolites, Substance P) is responsible for *Ruk* that is all type of Pain. Hence forth *Raktamokshana* by *Siravyadha* is instrumental by relieving symptom like *Ruja*.

In general, the various probable mechanisms are going to change in the body by bloodletting, such as local blood supply is improved, local metabolism is improved, local drainage system is improved, fresh RBCs are produced which are active.

If the above conditions are treated earlier, then various steps of complications can be stopped, otherwise severe anoxia in the lower part of the leg and surrounding tissue can lead to chronic venous ulceration. Recurrent varicose veins are veins which have become varicose after the previous treatment, which had once become ‘normal’ after the treatment. This occurs when all the visible varicosities were treated but the underlying abnormality was not corrected; the remaining ‘normal’ veins abnormal pressure and subsequently dilate.

The mechanisms of releasing hormones sympathetic nerve functions etc. are triggered which helps to stimulate the bone marrow immune related T-lymphocytes. *Raktamokshana* invariably results in immediate repair when compare to other therapeutic

procedures that take longer periods for the relief of Symptoms.

#### **Discussion on probable mode of action of Udvartana along with Siravyadha**

*Udvartana* is one of the *Panchakarma* therapies which differ from *Abhyanga* in its direction of application and pressure during the procedure. It is a simple and affordable procedure with no harmful effects and done with *Kolakulathadichurna* which contains drugs like *kola*, *Kulathasuradaru*, *Suradaru*, *Rasna* etc. all these drugs possessing qualities like *Tridosahara* (mainly *kaphavatahara*), *vranahara*, *Kandughna*, *Amaharatwa*, *Siramukhavivechana* etc. It possesses *Shoshana* (absorption) and *Kapha-Medohara* (alleviation of vitiated *Kapha* and *Meda*) properties. it helps to bring back the *Vikrutha Vayu* to its normalcy.

Seven days course of *Udvartana* was given to the patients of group A for about 20-minute duration in supine and prone position in *Pratiloma* direction. As mentioned in *Samprapti* of *Sirajagranthi* the *Vatakaphadosa* involved along with vitiation of *Raktha*, *Mamsa* and *Medodhathu*. So, while doing rubbing it opens the minute channels and improves blood as well as lymphatic circulation result in relief of blood stasis and carries away morbid products in the system. The production of heat due to *Udvartana* promotes local circulation and metabolic activities and opens the pores of the skin to permit transfer of medicaments and nutrients towards needed sites and elimination of vitiated *Doshas* and *Malas* through skin and perspiration. It provides a platform for further procedures. After 7 days of *Udvartana* patient was undergone with *Siravyadha* procedure.

The probable mode of action can be hypothesized as follows

The medicated powder is rubbed over body in the opposite direction of hair root. Rubbing may help in the absorption of effusions, relief of blood stasis and carries away the morbid products in the system. The pressure helps the contents of the blood vessels move towards the heart, if applied strongly and quickly, it has a stimulating effect. It increases nutrition in tissues, removes fatigue, carries away the increased products of combustion. The skin as well as the struc-

tures which lie beneath it is affected by massage. The stored amount of blood may be brought in the systemic circulation instead of them remaining dormant in the stored system.

*Udvartana* has *Kapha-Medavilayana* property. To enhance the *Medovilayana* property, *Katu-Tikta* rasa (pungent-bitter); *Ushnavirya*; *Laghu Ruksha-Tikshna Gunadravyas* are present. *Twakasthaagni* gets stimulated, this leads to absorption and digestion of the drug and further does *Pravilayana* of *Medo Dhatu* (liquefaction of subcutaneous fat) below skin may occur.

- ✓ It has got great influence on the muscles. It gives them a mechanical stimulation causing them to contract.
- ✓ It increases circulation mainly in the veins. The alternate pressure and relaxation bring fresh blood to the part.
- ✓ It improves the nutrition of the particular area.
- ✓ It raises temperature locally.
- ✓ It increases elimination of waste products.
- ✓ It increases secretion and absorption.
- ✓ It improves the condition of the nervous system by stimulating the cutaneous nerve endings.
- ✓ It influences the general metabolism when applied on large areas.
- ✓ Helps to breakdown thickening and adhesions in sub-acute and chronic conditions.

Also helps in the reabsorption of inflammatory products and absorption of fat in fatty tissues

## CONCLUSION

In this clinical study, both Group A and Group B showed significant results in all attributes of *Sirajagranthi*

On comparison there is statistically significant difference between the two groups in pain (Group A 85%), itching sensation (Group A 65%), swelling (Group A 40%) and pigmentation (Group A 48%) of *Sirajagranthi*.

Therefore, on the basis of the observations from the present study, it may be concluded that the total effect of *Siravyadha* after *Udvartana* was better than *Siravyadha* done without *Udvartana* in the management of

*Sirajagranthi*. On comparison there is statistically significant difference between the two groups in pain (Group A 85%), itching sensation (Group A 65%), swelling (Group A 40%) and pigmentation (Group A 48%) of *Sirajagranthi*. *Siravyadha* done after *Udvartana* showed more results in main attributes like pain, itching sensation and pigmentation.

As from the study, the null hypothesis H<sub>0</sub> is rejected and the alternate hypothesis H<sub>1</sub> is accepted i.e. H<sub>1</sub>- There is significant effect of *Udvartana* with *Siravyadha* in *Sirajagranthi* (varicose vein).

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