

## ROLE OF AYURVEDA IN OCCUPATIONAL HEALTH FOR *SIRA-GRANTHI* (VARICOSE VEIN): AN EMERGING OCCUPATIONAL DISEASE

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### ABSTRACT

*Ayurveda*, the science of life has been nurturing health by means of its unfaltering bank of knowledge. With the advancement in industrialization and competitiveness, the need for a healthy body and mind has become the need of the hour. Diseases caused due to occupational stresses are also fast devouring the health of individuals. This is where *Ayurveda* can effectively come handy in restoring the physical and mental health of an individual. Occupational safety and health is a right enshrined in the Constitution of India under Section 39(e & f). *Sira-Granthi* (Varicose Vein) has been considered as an occupational disease by the International Labour Organisation (ILO), under “Vascular abnormalities of the extremities”. The prevalence of this disease is rampantly increasing these days. For effective management of *Sira-Granthi* (Varicose Vein), the role of *Ayurveda* can be thoroughly appreciated. This is a conceptual study to validate the role of *Ayurveda* in occupational health for *Sira-Granthi* (Varicose Vein) as per the results obtained in various clinical studies.

**Keywords:** *Jalaukavacharana*, *Sira-Granthi*, Occupational Disease, Varicose vein, Medicinal Leech.

### INTRODUCTION

Occupational disease can be defined as any chronic ailment that occurs as a result of work or occupational activity. The rampant rise in work space related competition in every part of the world has also led to a proportional increase in the number and severity of the cases of Occupational Diseases worldwide. Occupational safety and health is a right enshrined in the Constitution of India under Section 39(e & f). *Sira-Granthi* (Varicose vein) is posing as a major health hazard to the people en-

gaged in jobs that require long hours of standing, e.g. laborers, soldiers, teachers, etc. *Sira-Granthi* (Varicose vein) has been mentioned by the International Labour Organization (ILO) as an occupational disease (work related diseases) under the heading of “Vascular disturbances of the extremities”.

Amongst the *Samhitas*, *SushrutaSamhita* was the first in describing *Sira-Granthi* along with its etiology, pathology, prognosis and physical signs<sup>1</sup>.

Though *Acharya Sushruta* did not put much light on the treatment modalities to tackle the disease, he mentioned that it is extremely difficult to cure<sup>2</sup>. *Acharya Vagbhata* has propounded similar thoughts, though with some modifications in physical signs, while also going a step further in describing the treatment modalities that can be taken into consideration for treatment of the disease<sup>3</sup>.

In *Ayurveda*, the treatment of diseases may be achieved by *Nidanaparivarjana* (prevention of causative factors) and *Sampraptivighatana* (breaking the pathological process). *Acharya Vagbhata* has mentioned various methods for treatment of *Sira-Granthi* such as intake of *Sahacharaditaila*, *Upnaha* with *vatahara* drugs, *Vasti karma* and *Rakta-visravana*<sup>4</sup>.

Also while explaining regarding *Jalaukavacharana*, it has been mentioned to be highly effective in *grathitadoshas*<sup>5</sup> while also being the safest means of *Rakta-visravana* in case of patients having *sukumara*<sup>6</sup> nature.

On taking account of the *sukumara* nature of most of the patients these days; *Jalaukavacharana* gains great importance as a tool for *Rakta-visravana*. Also, its easy handling and application, economical nature and relative painlessness give an edge for it to be used as a manageable means of treatment for masses without the fear of major complications.

In spite of the tremendous advances made in the field of modern surgical management, *Sira-Granthi* (Varicose vein) poses as a problem to the surgeons. In *Ayurveda*, many methods have been mentioned for the purpose of treatment of *Sira-Granthi* (Varicose vein), of which, *Rakta-visravana* is of major importance as it directly acts on the *raktadhatu* while also alleviating the *doshas*.

## **MATERIALS AND METHODS**

For the purpose of this study; Classical *Ayurvedic* Literature was thoroughly studied to establish the most effective *Shodhana* treatment for *Sira-Granthi* (Varicose Vein). Thereafter, the prevalence of *Sira-Granthi* was observed and recorded in patients to study the occupational distribution of the disease.

References from various research papers were studied to establish the role of *Ayurveda* in the treatment of *Sira-Granthi* (Varicose Vein). Following this pilot studies were conducted by treating patients of *Sira-Granthi* by sessions of *Jalaukavacharana* on OPD basis and the results were recorded.

Once the role of *Ayurveda* (*Jalaukavacharana*) for the treatment of *Sira-Granthi* was established on the above said basis; a wide variety of literature ranging from the classical texts to the modern textbooks and recent developments were studied in-depth. Wherever need be, the most appropriate conclusions were drawn regarding the probable mode of action of the therapy based on modern principles as well.

The importance of *Jalaukavacharana* (*Ashodhana* therapy as mentioned in *Ayurveda*) in *Sira-Granthi* (Varicose vein) has hence been validated and put forward.

## **RESULTS**

Leech saliva contains about 60 different proteins<sup>7</sup> which serve as anticoagulant (hirudin), platelet aggregation inhibitors (like apyrase, collagenase and calin), vasodilators and proteinase inhibitors<sup>8</sup>. Also, it contains an anaesthetic<sup>9</sup> that renders leech bite painless. All these actions put together lead to removal of any micro-clot leading to enhanced venous return causing improvement in local circulation. This speeds up the reparative process.

*Jalaukavacharana* has been mentioned to be helpful in *grathita dosha*<sup>5</sup>. Repeated sittings of the procedure help to dissolve the deep seated clots in the blood stream while also removing the load of morbid blood cells and hence reducing the chances of blood stagnation.

Many studies in the field of Ayurveda have advocated the use of ‘Medicinal Leeches’ in treatment of complicated varicose veins and found that these aided ulcer healing and hence could be used in the management of complicated varicose veins.

Also, it has been found that *Jalaukavacharana* may interact with antibiotic therapy such as trimethoprim and sulfamethoxazole to precipitate allergic reaction.

## DISCUSSION

Modern lifestyle has led to a rampant increase in the number of cases of *Sira-Granthi* occurring as an occupational hazard. Long hours of standing leads to eventual stasis of blood in veins of the lower extremity, also, weakening of the valves leading to pooling of blood in these veins.

*Acharya Sushruta* has advocated the use of ‘*Nirvisha Jalauka*’ for the purpose of *Rakta-visravana*. These include six types of leeches named as ‘*Kapila*’, ‘*Pingala*’, ‘*Shankumukhi*’, ‘*Mushika*’, ‘*Pundreemukhi*’ and ‘*Savarika*’<sup>10</sup>. While ‘Medicinal Leeches’ used these days include *Hirudomedicinalis*, *Hirudoorientalis*, *Hirudotroctina*, *Hirudo verbena*<sup>12</sup>. The description of these leeches completely matches that of the ‘Medicinal Leech’. Also, the morphological characteristics described are similar, such as their body color that ranges from green to greenish brown and brown. It has also been mentioned to have a thin red stripe on the dorsal side.

The habitat mentioned by *Acharya Sushruta* for ‘*Nirvisha Jalauka*’ and that described for ‘Medicinal Leeches’ used these days is told to be fresh water<sup>10</sup> in both cases.

The chemical ingredients present in Leech saliva includes Hirudin (Inhibits blood coagulation by binding to thrombin), Hyaluronidase (Lowers viscosity of hyaluronand thereby increasing tissue permeability), Apyrase (Inhibits host platelet aggregation), Collagenase (Enzyme that breaks the peptide bonds in collagen), Proteases (Enzymes for debridement of wounds and burns), Lipolytic enzymes (Breakdown of lipids by the hydrolysis of triglycerides), Destabilase (Dissolves fibrin hence providing thrombolytic effect), Bdelines (Anti-inflammatory; inhibits trypsin, plasmin, acrosin), Eglines (Anti-inflammatory; inhibit the activity of alpha-chymotrypsin, chymase, subtilisin, elastase, cathepsin G), Calin (Inhibits blood coagulation by blocking the binding of Von Willebrand factor to collagen), Tryptase inhibitor (Inhibits proteolytic enzymes of host mast cells), Factor Xa inhibitor (Inhibits the activity of coagulation factor Xa by forming equimolar complexes), Acetylcholine (Vasodilator), Carboxypeptidase A inhibitors (Increases the inflow of blood at the site of bite).

The main effects of the ‘Medicinal Leech’ on the body include decreased blood clotting, thrombolytic effect, anti-ischemic effect, anti-hypoxic effect, hypertensive (normotensive) effect, restoration of the microcirculation, recovery of neuromuscular impulse transmission, restoration of vascular permeability, bacteriostatic and immunostimulatory effect.

## CONCLUSION

*Jalaukavacharana* shows immense potential as a health care tool having minimum complications while providing maximum benefits. Whereas, various procedures followed by the modern day surgeons provide little relief that too temporarily and yield minimum benefits even after being invasive in nature. Besides this, it also has the risk of developing surgical complications such as wound infection, etc. The *Jalaukavacharana* procedure is

hassle free and economical while also being highly effective. This validates the importance of *Jalaukavacharana* as an effective mode of treatment in *Sira-Granthi* (Varicose vein).

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