

A Review and Probable Mode of Action of Jaulakavacharana in Hrudroga with Special reference to Coronary Artery Disease.

Subodh C. Patil*¹, Rohit Moujkar², Sanjivan V. Kulkarni³

1. Assoc. Prof. H O D Dept. of Panchakarm,
2. Assoc. Prof. H O D Dept. of Anatomy,
3. Assoc. Prof. H.O.D. Dept. of Kayachikitsa,

Smt. K. C. Ajmera Ayurved College, Dhule, M. S., India

*Corresponding author: drsubodh77@gmail.com

Abstract:

Panchakarma is globally known term today and it has grown in to super specialty of Ayurveda. According to Acharya Sushruta Raktamokshana is a karma which involves the removal and renewal of dushta Rakta. Jalukavacharan is type of Ashastrakruta Raktamokashan done by applying leeches. Jaluka (Leech) has got place in the right hand of the lord Dhanvantari underlines the importance of the Jalauka in medicinal treatment. Nirvish Jalauka are used to treat arthritis, vascular and venous diseases, varicose vein ulcers heart and lungs problems, Skin conditions like psoriasis, eczema and hypo pigmented patches. The sign and symptoms of Hrudroga mentioned in Samhitas are almost similar to cardiovascular heart diseases among which coronary heart disease (CAD) or ischemic heart diseases is the common type of heart disease leading cause of deaths in all over the world involving both men and women. Emergency management of cardiac disease is merely sufficient in modern system of medicine but for preventive and curative aspect

(apunarbhava chikitsa) Jalaukavacharan has important role as thrombolytic and anti inflammatory activity by removing the local blood impurities and toxins. Jalaukavacharan a type of bloodletting therapy helps to eliminate vitiated Doshas mainly Pitta Dosh. Leeches are indicated in surgery whenever there is venous stasis. The saliva Jalauka contains more than 100 bioactive substances which have analgesic anti inflammatory properties and lead to elimination of microcirculatory disorders. Also leech therapy is less expensive and one of effective treatment of Hrudroga especially coronary heart disease.

Keywords: Leech therapy, Jalaukavacharana, bioactive constituents, coronary heart diseases.

Introduction: In emergency diseases Hrudroga is most important diseases which can be fatal if ignored and not treated properly. According to WHO report cardiovascular diseases is leading cause of death and disability around the world . Now a days as a result of changing life style the older as well

younger generation is seen affected by Hrudroga . Ayurveda treatment like panchakarma not only gives quick results or cure chronic diseases but also cures emergency diseases along with Hrudroga. In panchakarma Raktamokshan with dietary regime can be crucially important to prevent hrudroga when done at proper time of year (Sharad Ritu) . Jalukavacharan is application of leeches over desired part to remove impurities of blood and associated Doshas .Jalukavacharan is safest and mild type of raktamokashan with negligible complications.

Cardiovascular diseases includes all diseases of heart and circulation including coronary heart diseases ,heart failure ,congenital heartdisease and stroke . Coronary heart diseases can correlated with hrudroga conditions explained in Ayurvedic classics . coronary heart disease also called as atherosclerotic heart disease treated with self care and medication and surgery (angioplasty and coronary bypass surgery) . self care includes physical exercise, stopping smoking ,weight loss and low fat diet , while medication includes mainly Statins and blood thinners .Blood thinners are medicines that helps blood flow smoothly through veins and arteries .They also keep blood clots from forming or getting bigger .they can protect from heart attacks and stroke but also come with risks eg they can cause more bleed than usual bleeding conditions .the life saving benefits of these drugs often outweigh the potential dangers. There are two types of blood thinners Anticoagulants and Antiplatelets . Antiplatelets targets tiny particles in the blood called platelets e.g. Asprine, clopidograle. They do keep blood from forming new clots .they can

slow the growth of existing ones. They are often prscribed to people at risk for future blood clots , rather than to treat existing one .About 2 to 3 million peoples take blood thinners every year as they reduce risk of having second heart attack or stroke. Here Jalaukavacharan is coming forward as equally effective with extra property of selective removal of blood impurities promoting cure at less cost . Jalaukavacharan can be done as instant relief procedure to get benefits of pain relief and various medicinal effects of Hirudotherapy.

Materials and Methods : Data was gathered from Ayurvedic classical text books and physicians , internet and through personal experiences.

Hrudrog: Cardiovascular disease (CVD) is class of diseases that involve coronary artery disease (CAD) such as angina and myocardial infarction other CVD includes stroke , heart failure hypertensive heart diseases, valvular heart disease, carditis, aortic aneurysms, thromboembolic diseases and venous thrombosis . The main aspect of the disorder is a physical deterioration of the structure of cardiovascular vessels walls .It is of three main types 1) Clogging of vessels with cholesteroland plaque 2) Compromised vessels wall thickness and lumen 3)Damaged areas due to increased pressure and free radical activities. This leads to various symptoms including pain weakness shortness of breathing palpitations and fainting. Cardiovascular disease is correlated with condition of Hrudrog explained in Ayurvedic classics.

Manifestations stated in Ayurveda are change in complexion breathlessness confusion lack of appetite particularly in Vataj – palpitation, arrhythmia , Pittaj – Anginal burning

pain and yellowish discoloration, Kaphaj –drowsiness ,cough and heavy sensation in heart depending upon the Samprapti the line of treatment is decided. The treatment modalities include Shodhan and Shaman treatments with preventive measures like healthy eating, exercise avoidance of tobacco smoke and limiting alcohol intake.

Historical review of Jalauka : Acharya Charaka has mentioned Jalouka as best Anushashtra Acharya Sushruta Vagbhat and Harita focused on application of Jalouka In details in their literature. Jalaukas are mainly classified in two groups Savish(poisonous) and Nirvish(medicinal) .Nirvish Jaloukas are of 6 types as Kapila (greenish), Pingala (reddish) , Shankumikhi (Blackish), Mooshika(rat like colour and shape),Poondarikmukhi (lotus like), Savariaka(18 angulas in length).Achaya Vagbhata classified Jaloukas in Stree Jalouka and Purusha Jaloukas according to their sex characters .

Gunas of Jalaukas : sheet , snighdha , shlakshna action on dosha – Pittahara

Indications of Jalaukavacharan :Acharya Sushruta has advised to carryout jalaukavacharan in especially in king, rich, children, old persons , ladies and sukumar persons .rakmokshan is advised in non healing ulcers caused by venom or poison where leeches are preferred mode of bloodletting to induce healing.in the treatment of abscess. Certain grandular inflammatory swellings inflamed scrotal swelling Acharya Sushruta has indicated Jalaukavacharan as a prerequisite of for incision and drainage in order to localized the abscess. Use of leeches in surgery- in plastic surgery , venous occlusion is serious threat that may leads to thrombus formation ,stasis eventually

tissue necrosis .thus relieving venous congestion is important step towards conservation of transplanted tissues. The relieving effect is accumulated result of leech bite induced blood oozing which is In due to many factors present in the secretion of leech like bioactive enzymes , anticoagulants and vasodilators .Leeches has been reported as successful remedy to improve blood flow after microsurgery of scalp avulsion cases . Leech application was prescribed for as a post operative care in patients who undergone a surgical operations for reconstruction of fingertips .

The painkiller effects of Jalaukavacharan is ascertained in many trials on patients with osteoarthritis who claimed that leech therapy is more relieving than topical Diclofenac sodiums .

Component and effects of leech saliva

1. **Hirudin** inhibits blood coagulation by binding to thrombin.
2. **Calin** inhibits blood coagulation and collagen mediated platelet aggregation by blocking binding of von Willebrand factor of collagen
3. **Hirustasin** inhibits kallikrein – responsible for normal level of blood pressure in intrinsic coagulation
4. **Hyaluronidase** increases interstitial viscosity ,antibiotic effect
5. **Eglins** Anti inflammatory ,inhibits the activity of chymotrypsin, subtilisin ,cathepsin G chymase ,elastase
6. **Destablize** Dissolves fibrin
7. **Bdellins** Anti-inflammatory , inhibits plasmin ,acrosin ,trypsin

8. **Factor Xa Inhibitor** inhibits the activity of coagulation factor Xa – conversion of prothrombin to thrombin
9. **Histamin like substances** Vasodilators increases the inflow of blood flow at the bite site
10. **Tryptase inhibitors** Inhibits phteolytic enzymes of host mast cells.
11. **Carboxypeptidase A inhibitor** Increases the inflow of blood flow at the bite site
12. **Acetylcholine** Vasodilators
13. **Collagenase** Facilitate tissue penetration
14. **Apyrase** Inhibitor of platelet aggregation by inhibition of adenosine tri phosphate.

Mechanism of bloodletting in hrudrog

Discussion

When jalaukavacharan is done in patient of hrudrog , jalauka is applied around the surface area of heart on both side . Jalauka starts to suckion of blood actively removing the impurities of pitta and raktaj doshas breaks the smprapti of hruroga . afterwards passive ozzing of blood starts for while of the wound . Jalauka injects biological active substances with the saliva into circulation around the applied area . Saliva of leeches contains more than 100 bioactive substances, including coagulation inhibitors ,platelet aggregation inhibitors vasodilators antimicrobial and anti inflammatory subatance which relieves local inflammation and promotes normal flow around coronary circulation .

Action area of Jalauka is one (weet) one hasttal .so we can apply Jalauka over the chest near heart to get best results . so by bloodletting of 10to 30 ml with

Jalauka we promot the healing process in coronary tissues before as well as after ischemic evidences in heart preventing the damage to myocardium.

Probable mode of action:

The ant inflammatory and analgesic properties of Jalauka in many aspect are associated with the blockages and aamidolytic and kininogestic activities pf plasma kallikrein , resulting in prevention of new thrombus formation and ultimately improving cardiac health and functioning .As well as pain relief in leech sessions.

Leeches may also secrete a vasodilative, histamine like substances which increases the inflow of blood promoting developments of collateral blood vasculature around the blood vessels. The persistant bleeding largely potentiates tissue decongestion and also relive capillary network which decreases venous congestion ., positive changes of local haemodnamic improvements of coronary circulation increases oxygen supply which promotes tissue metabolism and elimination of the coronary tissue ischemia .

Conclusion:

Jalaukavacharan therapy is less expensive and simple method of blood litting. It is convenient panchakarma procedure that can be employed in varying instances . With modern tools of investigations better understanding of mode of action of jalauka has become possible. By considering the increased incidence of coronary artery diseases Jalaukavacharan should be promoted . It can be good alternative in ischemic heart condition as there are no side effects as in use of conventional medications . there is potential for futher investigative study in the role leeches in coronary artery diseases different

conditions keeping study open for further research.

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