



International Journal of Ayurveda and Pharmaceutical Chemistry

Volume 7 Issue 2 2017

www.ijapc.com



Effect of *Pushkarmoola (Inula Racemosa)*churna in Hridshoola w.s.r. to Angina

Deepak Ekka^{1*}, Swati Dubey² and Saroj Parhate³

¹Dept. of Kayachikitsa N.P.A. Govt Ayurvedic College Raipur, C.G., India

²Dept. of Rasashastra & BhaishajyaKalpana N.P.A. Govt. Ayurvedic college Raipur, C.G., India

ABSTRACT

Cardiovascular diseases are the leading cause of death globally. It accounts for approximately 30% of deaths worldwide. Cardiovascular disease comprises the most prevalent serious and a rapidly growing problem in developing nations like India. According to the WHO, cardiovascular disease causes 12 million deaths in the world each year. According to *Ayurveda Sadhak Pitta, AvalambakaKapha, Vyanvayuare* responsible for heart disease. Main cause of heart disease is atherosclerosis which is waxy substance called Plaque buildup inside the coronary arteries, other causes are high LDL, Low HDL Diabetes, smoking, post menopausal women. There are an estimated 45 million patients of coronary artery disease in india. An increasing number of young Indians are falling prey to coronary artery disease. With millions hooked to a roller-coaster lifestyle, the future looks even grimmer. In ayurveda *Inula Racemosa* is very useful drug for heart. Besides this it also has anti-atherosclerotic, anticoagulant, anti-infarction, hypo-lipidemic & hypotensive properties. So, *Ayurvedic* drug *Inula Racemosa* is a better option for the treatment of Angina (*Hridashoola*) because it can improve the quality of life in individuals & potentially save millions of lives.

KEYWORDS

Innula racemosa, Atherosclerosis, Angina, Anti-infarction



Greentree Group

Received 02/08/17 Accepted 29/08/17 Published 10/09/17



INTRODUCTION

Rasavaha srotas is a *dhatuvaha srotas*, which carries or circulates the *Rasadhatu*¹. It moves in all over the body along with *vyanavata*². In *Ayurveda* cardiovascular system is correlated with *Rasavah Srotas*. According to *acharya Charak*, *moola* of *Rasavah srotas* is *Hridaya*(heart) and *dashdhamani*³. *Shushrut* also mentioned the same⁴. That heart is the pumping station of *rasadhatu*, *Hridaya* considered as a heart in relation to *Rasavahasrotas*. *Dasadhamnyah* is correlated with ten blood vessels. This mechanism of circulation is made possible by *vyanvayu* through *Hridaya*. *Hridaya* is main organ in cardiovascular system, *hridaya* word has been used in multiple dimension based on its varied functions. Two type of concept about heart in *ayurveda* that is *Urohridaya* (Heart) and *Sirohridaya* (Brain)⁵. In India, cardiovascular disease(CVD) is the leading cause of death. The death due to CVD in 2007 in India were 32% of all population and rise to 2.03 million in 2010⁶. *Ruja* in *hridpradesh* called *hridshoola*. About *Hridshoola* According to *samprapti-ghataka*, *Rasa Dhatu* is *Dushaya*, *Srotodusthi* is *Sanga*, involvement of *Rasavaha-Pranavahasrotas* and mainly it is a *Tridoshajavyadhi* and *vatadosha* are mainly responsible for heart disease⁷.

Aacharya Madhav described (*Hridashoola*) within *Vatikshool*⁸ Mechanism of *Hridashoola* is described by *acharya Shu.u.t.* 42/13⁹. According to modern science it's described under the coronary artery disease. Angina occur due to inadequate blood supply to the cardiac musculature¹⁰ because of narrowing or blockage of the coronary artery, resulting a chest pain, shortness of breath, palpitation and fatigue. Main cause of heart disease is atherosclerosis which is a waxy substance called Plaque build-up inside the coronary arteries. The traditional risk factor for CAD are high LDL cholesterol, low HDL cholesterol, high blood pressure, family history, diabetes, smoking and being post menopausal woman. Classically character of angina is constricting, squeezing, pressing or crushing in nature, pain radiate to left shoulder and upper arm, radiate elbow and wrist joint, sometime it may radiate to the neck, upper jaw, throat and back intra-scapular region. In heart disease free radicals are released in artery and oxidize low-density lipoprotein. The oxidized LDL is the basis for cholesterol build-up within the artery and damage of the artery wall. In *Ayurveda Pushkarmoola churna*¹¹ which has rich *Katu, Tikta, Ushana guna*¹² along with



Madhu, play a very effective role in Angina, dyspnea and palpitation of heart.

AIMS AND OBJECTIVES

(1) To provide an absolute knowledge about *Hridyashoola* (Angina pectoris).

(2) Pharmacological effect of *Pushkarmoolachurna* in management of Angina pectoris

PATHOLOGY IN AYURVEDA

POINT OF VIEW:-

According to *Acharya Shushruta* due to repeated *Mithyaaaharvihar*, *Kapha & Pitta Dosh*a are increase and mixed with *Vata*. They cited in heart and due to narrowing the lumen of coronary artery resulting a pain. It is correlated with Angina Pectoris in *modern science*⁹.

CORONARY ARTERY DISEASE:-

Coronary artery disease is caused by inadequate blood supply to cardiac muscle due to occlusion or narrowing of coronary artery. Angina is also coronary artery disease¹³.

CLASSIFICATION OF CORONARY ARTERY DISEASE¹⁴:-

- Angina pectoris
- Myocardial infarction (MI)
- Chronic heart disease
- Sudden cardiac death

ANGINA PECTORIS¹⁴:-

Angina pectoris is a coronary artery disease characterized by retrosternal pain & pain radiated to the left arm which denotes lake blood supply of the heart and pain subside after taking a rest.

PRECIPITATING CAUSES¹⁵:-

- (1) Heavy exertion (5)
- Heavy diet
- (2) Excessive Cold (6)
- Emotions and excitement
- (3) Hyper insulinism in diabetic patients
- (4) Sexual intercourse, during micturition.

CLASSIFICATION OF ANGINA¹⁶:-

Angina pectoris is classified into five specific classes depending its appearance :-

- **Class 0:** No any Sign & Symptoms.
- **Class 1:** Angina can't occur due to daily routine work like walking or climbing stair. it's appear rapid or prolonged exertion.
- **Class 2:** Angina can occur during rapidly walking or climbing, exposure to cold, after a heavy diet, emotional stress
- **Class 3:** In this person feel discomfort or uneasy to his daily routine work or physical activity.
- **Class 4:** Patients feel more discomfort and unable to do any physical activity.

CLINICAL FEATURES¹⁰:-

The following clinical features are found in angina pectoris:-



(1) Commonly pain found in mid or upper sterna region in 80-90%.

(2) An uncomfortable pressure, fullness, squeezing pain in the center of the chest.

(3) Also feel tightness, burning or heavy weight.

(4) Pain radiated to left shoulder, neck & upper arm

(5) Usually start after exercise, walking uphill, walking against wind, after heavy meals even during sexual intercourse.

Others symptoms may occur with an Angina attack:- Shortness of breath, Lightheadedness, Anxiety, Sweating, Nausea, Irregular heart beat.

EFFECT OF *Inula Racemosa* IN ANGINA:-

(1) *Pushakarmoola*¹² :-

Properties -

Rasa- Tikta, Katu

Gun-Laghu, Tikshana

Virya - Ushana

Vipaka - Katu

Action -*Kaphghna, Hridya, Parshashoolhara, Medohara, Anti-inflammatory, anti-helminthic, weak heart, anti-spasmodic activity, cardio tonic, bronchodilator, improve cardiac debility, improve heart rhythm, prevents angina episodes, controls cholesterol level & cure cardiac Pain*¹⁷

(2) *Madhu* -

Properties -

Rasa - Madhura

Guna-Ruksha, Sheeta, Laghu

Virya - Sheeta

Vipaka - Katu

Action -*Varnya, Agnivardhaka, Supachya, Lekhana, Hridya, Vajikarna, Samdhana*¹⁸*Ropana, Medograndhi-Chedaka*¹⁹*Grahi, Medodhatu-Sthoulyanashaka, Atilekhana*¹⁸*Srotomarga shodhaka*²⁰

CHEMICAL COMPOSITION OF *INULA RACEMOSA*²¹ :-

Plant - Isoalloalantolactone, beta-sitosterol, isoalantolactone, pyrazoline.

Oil:- Sesquiterpenes, phenylacetonitrile, benzaldehydesesquiterpene hydrocarbon.

Root:- Sesquiterpeneslacton, D-mannitol, inulin.

RESULTS

Due to all above properties of *Inula-Racemosa* on the basis of their *Rasa-Guna-Virya-Vipaka* and other pharmacological activity and various type of chemical composition present in Plant, root or oil they Play a very effective role in management of Angina.



DISCUSSION

Angina is caused by thrombus, emboli specially atherosclerosis formed by the deposition of protein, fat, lipid, carbohydrate, cholesterol within the artery which is responsible for lake blood supply to the heart due to narrowing of coronary artery lumen. resulting Anginal pain. It is a leading cause of death in Indian population⁶. *Pushkarmoolachurna* with *Madhu* plays very effective role in *hridshoola* due to following properties like *Kaphvatashamak* due to *Ushanaveerya* and *Stroshodhak* due to *Tikshanaguna*. Including *Madhu* is *Supachya*, *Lekhana*, *Hridya*, *Vajikarna*, *Samdhana*¹⁸*Ropana*, *Medograndhi-Chedaka*¹⁹, *Grahi*, *Medodhatu-Sthoulyanashaka* and *Atilekhana*,¹⁸*Srotomarga shodhaka*²⁰. In heart disease free radicals are released in artery and oxidize low-density lipoprotein. The oxidized LDL is the basis for cholesterol build-up and damage coronary artery wall. Both medicines are good *Deepan-pachana* properties because of *Katu-Tikta* which is prevent the formation of free radicals as well as oxidation promoted by this drug. *Pushkarmoola* rhizome has *Sesquiterpanelectone*, *Alantolactone* they control heart rhythm, prevent angina episodes & control cholesterol level.

Alcoholic root extract of *Innula racemosa* show Anti-histaminic and Anti-serotonergic effect as well as essential oil are antibacterial and antifungal activity against *S.aureus*, *Ps.aeruginosa*. The essential oil exhibited anthelmintic activity against earthworms and tapeworms²². *Innula racemosa* root Powder prevent ST-segment depression and T-wave inversion. This indicates may have adrenergic activity. Especially combined with *Comiphora mukul* it decreases cholesterol level in liver.

CONCLUSION

Angina pectoris is a one of the fetal coronary artery disease for this rhizome extracts of *Pushkarmool*, *sesquiterpanelacton*, *Alantolactone* and roots are bitter, acrid, thermogenic, cardiotoxic expectorant, alexipharmic, anodyne, anti-inflammatory, digestive, carminative, aphrodisiac, febrifuge and tonic. *Sesquiterpane lacton* is improve heart rhythm and *Alantolactone* is *Krimghna* properties so also used in *Krimij Hridya roga*²³. *Pushkarmoola* has shown anti-Anginal and hypolipidemic activity in coronary heart disease²⁴ For the management of Angina pectoris avoid stress, heavy work and fatty diet in daily routine, control systemic hyper-tension, left

ventricular failure and lipid abnormalities, approved exercise program, decrease intake of coffee and tea. So *Pushkarmoolchurna* with *anupana* of *Madhu* very useful in the management of *Hridashoola*(Angina Pectoris).



REFERENCES

- 1 Prof. Dr. M. Srinivasulu, Clinical diagnosis in Ayurveda Edition 1st Published by Chaukhambha Sanskrit Pratishthan, Delhi 2011 Page- 259.
- 2 Pt. Kanshinath Shastri Charak samhita Uttrardha, Choukhambha Bharti Academy Varanasi 2012 Page – 458.
- 3 Pt. Kanshinath Shastri Charak samhita Purvardha, Choukhambha Bharti Academy Varanasi 2011 Page – 710.
- 4 KavirajAmbikaduttaShastri, ShushrutaSamhita 1stChaukhambha Sanskrit Samsthan, Varanasi V.S. 2066 Page – 96.
- 5 Prof. Dr. M. Srinivasulu, Clinical diagnosis in Ayurveda Edition 1st Delhi Published by Chaukhambha Sanskrit Pratishthan, 2011 Page- 260.
- 6 Mrinalini Sant , A textbook of Pthology Landon, Published by NCBA new central Book agency (P) Ltd. 2010, Page – 283.
- 7 Prof. Ajay kumar Sharma Kaya-Chikitsa 2nd –i, Chaukhambha Oreyantaliya, Varanas 2011 Page – 140.
- 8 Dr. Brahmanand Tripathi Madhav Nidanam 1stChoukhambha surbharti Prashan, Varansi 2012Page – 578.
- 9 Kaviraj Ambikadutta Shastri, Shushruta Samhita 2nd Chaukhambha Sanskrit Samsthan, Varanasi V.S. 2066 Page – 96.
- 10 Prf. P. C. Das, Text book of Medicine 5th Edition, Lenin Saranee, Published by – Current books International 60,Kolkata,2009 Page- 35.
- 11 Proff. Sidhinandan Mishra Bhaisjya Ratnawali Published by Choukhambha surbharti Prakashan,Varanasi U.P.2012 Page- 667.
- 12 Prof. P.V. Sharma Dravyaguna-Vijana Vol.2ndPublished by ChaukhambhaBharti Academy.Varanasi2012 Page- 296-297.
- 13 K. Sembulingam&Premasembulingam, Essential of Medical Physiology 7th Edition, Published by Jaypee Brothers Medical Publishers (P) Ltd.New Delhi 2016 Page- 660.
- 14 Harsh Mohan, Textbook of Pathology 5th Edition Published by Jaypee Brothers Medical Publishers (P) Ltd. New delhi2005,Page- 318.
- 15 ASPI F. Golwalla, Sharukh A. Golwalla 23rd Edition Empress court, M. karva road or Eros Cinema building, churchgate, Mumbai, 2011 page- 230.
- 16 Campeau Lucien. Grading of angina pectoris. Circulation 1976;54:5223
- 17 Lt. Colonel K.B. Kirtikar, Major B.D. Basu, Indian medicinal plant 2nd Edition, Published by-Lalit Mohan Basu 40 Leader road Allahabad, Page-1352.



18 KavirajAmbikaduttaShastri,
ShushrutaSamhita 1stChaukhambha Sanskrit
Samsthan, Varanasi V.S. 2066 Page –232.

19 Pt. Kanshinath
ShastriCharaksamhitaPurvardha,
ChoukhambhaBharti Academy Varanasi
2011 Page – 554.

20 Padmshree Prof. Dr.Krishnachandra
Chunekar, Bhavprakash Nighantu By
Choukhambha Bharti Academy, Varanasi
2015,Page – 774.

21C.P. Khare Indian medicinal Plant An
illustrated dictionary B-1/211, JanakPuri,
New Deldi. India Page – 329.

22 Jaspreet Singh, A.K. Pandey, A Review:
An Impact of Innula racemosa(Pushkar
moola) On Dyslipidemia and Obesity,
World Journal of Pharmaceutical Research,
Volume 5, Issue 7, 528-538.

23 Pt. Kanshinath Shastri Charak samhita
Purvardha, Choukhambha Bharti Academy
Varanasi 2011 Page – 337.

24 Singh R, Singh RP, Batiwala PG,
Upadhayay BN, Tripathi SN. Puskara-
Guggulu an antianginal and hypolipemic
agent in coronary heart disease (CHD) J Res
Ayurveda Siddha. 1991;12:1-18.