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A CRITICAL ANALYSIS OF *CHAROKTA HARIDYA MAHAKASHAYA*

Dr. Satender Khatri[1], Dr. Rajiv Bansal[2], Dr. Sahana V.M. Vats[3], Dr. Vimla Bisnoi[4]

1. PG Scholar, Department of *Dravyaguna*, Uttaranchal Ayurvedic College, Uttarakhand
2. PG Scholar, Department of *Dravyaguna*, Uttaranchal Ayurvedic College, Uttarakhand
3. Asso. Professor & Guide, Department of *Dravyaguna*, Uttaranchal Ayurvedic College, Uttarakhand
4. Assist. Professor & Co- Guide, Department of *Dravyaguna*, Uttaranchal Ayurvedic College, Uttarakhand

*__Corresponding Author:__ Dr. Satender Khatri PG Scholar, Department of *Dravyaguna*, Uttaranchal Ayurvedic College, Uttarakhand

ABSTRACT-

Based on their actions, Acharya Charka classified the various medicinal plants in a combination of ten drugs into Fifty different combinations known as Mahakashayas. Cardiovascular disease (CVD) is the leading cause of death worldwide, accounting for 17.3 million deaths per year and expected to rise to more than 23.6 million by 2030. The present study for dissertation was aimed, to collect and authenticate the sample of each drug mentioned in Hrudaya Mahakashayas of Charka Samhita from any AYUSH Certified laboratory along with review the classical textbooks of Ayurveda and recent literature regarding Hrudaya Mahakashayas of Charka Samhita and to carry out the Pharmacognostical Analytical Study of Hrudaya Mahakashayas of Charka Samhita to find out the relation about Cardioprotective activities.

Hrudaya is the seat of Buddhi and Chetana as it controls Shareera, Manas and Indriyas. Thus, Hrudaya is considered as a psycho-somatic entity, if afflicted all the Prakriti Sharirika and Manasika functions are hampered leading to the manifestation of Hrudrogas. All Hrudaya Mahakashayas Dravyas are Amla Rasa Pradhana. The Guna Dharma of Hrudaya Mahakashayas can be implicated to be the same as that of Amla Rasa. Since Hrudaya Karma has been elucidated about its Rasa.

Keywords- Mahakashayas, Hrudaya, CVD, etc.

INTRODUCTION

Quality life support to ailing beings is foremost to human duties and was considered supreme since time immemorial. Ayurveda, the ancient Indian system of medicine, had traditionally extended life quality management considering the individual's physical, mental and social components of life.[1] Concepts of the holistic approach of Ayurveda are now only partially being realized as a superior tool in disease management. Complexities of holistic Ayurvedic approach can only be understood through a coordinated multi-pronged modem approach for a clearer insight, that requires simultaneous efficacy validation leading often, to a rich dividend in management of difficult ailment conditions[2.]

Charka Samhita a distinguished Ayurveda Classic provides a good description of herbal drugs that are available and are being used today. Acharya Charka has classified the various medicinal plants in a combination of ten drugs into Fifty different combinations which are mentioned as Mahakashayas based on their actions.[3] Each Mahakashayas is having ten plant drugs, and the name of Mahakashayas is given based on their actions and out of them Hrudaya Mahakashayas is one, which is claimed for having Cardioprotective action.

Cardiovascular disease (CVD) is the leading global cause of death, accounting for 17.3million deaths per year, a number that is expected to grow to more than 23.6 million by 20301. Cardiovascular diseases encompass atherosclerotic vascular diseases like coronary heart disease (CHD), cerebrovascular disease (CVD), and peripheral arterial diseases. Indecent years, demographics and health surveys have reported increasing malaise of CVD among individuals of all socioeconomic strata.[4]

According to recent statistics, incidences of CVD-related death and disability in low-income countries have grown at an alarming pace. In 2008, Gupta et al. reported that India alone is burdened with approximately 25% of cardiovascular-related deaths and would serve as a home to more than 50% of the patients with heart ailments worldwide within the next 15 years. The seriousness of the current scenario could be gauged by the fact that most CVD sufferers in India happen to be in their productive age which may potentially impose a huge socioeconomic burden and devastating consequences over the coming years.

The present study for dissertation was aimed, to collect and authenticate the sample of each drug mentioned in Hrudaya Mahakashayas of Charka Samhita from any AYUSH Certified laboratory along with review the classical textbooks of Ayurveda and recent literature regarding Hrudaya Mahakashayas of Charka Samhita and to carry out the Pharmacognostical Analytical Study of Hrudaya Mahakashayas of Charka Samhita to find out the relation about Cardioprotective activities.

AIMS AND OBJECTIVES

1. To collect and authenticate the sample of each drug mentioned in Hrudaya Mahakashayas of Charka Samhita.

2. To review the classical textbooks of Ayurveda and recent literature regarding Hrudaya Mahakashayas of Charka Samhita.
3. To carry out the Pharmacognostical Analytical Study of Hrudaya Mahakashayas of Charka Samhita to find out the relation in reference to Cardioprotective activities.

METHODOLOGY

The source of material collected from my thesis
The dissertation study was designed under following headings;

Phase I – Collection of data of Hrudaya Roga
Phase-II- Collection of data of Hrudaya Mahakashayas
Phase-III - Collection of raw drugs of Hrudaya Mahakashayas
Phase IV – Pharmacognostical analysis of whole plant.

PHARMACOGNOSTICAL EVALUATION OF THE TRIAL DRUG:

1. Macroscopic and Microscopic study of the drug was carried out at theSpectrum Analytical Labs, District Solan, Himanchal Pradesh.
2. Physio-chemical analysis was carried out at Spectrum Analytical Labs,District Solan, Himanchal Pradesh.

Macroscopic Evaluation: The macroscopic characters of the drug were observed forthe following organoleptic features and confirmed with the help of Sense Organs.

HRIDYA MAHAKASHAY-

Acharya Charka has described 50 Mahakashayas in the 4th Chapter of Sutra[1] Sthana. It is also called Dashadhamani. In any group of Dashadhamani, there are total ten drugs are mentioned and they may be used as single or in compound form as per the need and jurisdiction of Vaidya. In present Dissertation study Hrudaya Mahakashayas is selected which comprises of following ten Drugs.

1. Amra
2. Amratak
3. Lakucha
4. Karmarda
5. Vriskshamla
6. Amlavetas
7. Kuwal
8. Badar

9. Dadim
10. Matulung

Table No 1. Guna – Properties as per - Charaka Samhita:[2]

Drug Name	Bheda	Rasa	Guna	Veery	Doshagnata	Karma
Amra	Apakwa	-	-	-	Piitavardhaka	Raktapitta Kara
	Pakwa	-	-	-	Vataghna	Mamsa-Shukra Balaprada
Amaratak	Madhur	Madhura	Guru, Sasneh	Sheeta	Shleshmala	Brmhana, Tarpana, Vrushya, Vishtambhyajeeryati
	Amla	Amla	-	-	-	Raktapitta Kara
Lakucha	-	Amla	-	-	Pitta-kapha Kara	-
Karamarda	-	Amla	-	-	-	Raktapitta Kara
Vrukshamla	-	-	Ruksha	Ushna	Vata-shleshma Hara	Grahi
Amlavetasa	-	-	Ruksha	Ushna	Vata-shleshma Hara	Grahi, Bhedana, Shula-AruchiVibandhaMandagniMadyaviplava Hikka- ShwasaKasa-VamiVarcagadaVata shleshmaja Sarva Vikara Hara
Kuvala	-	-	-	-	-	-
Badara	-	Amla	-	-	Pitta-kapha Kara	-
Dadima	Amla	Amla	Snigdha	Ushna	Vataghna, Kaphapitta Avirodhi	Hrudya, Grahi, Deepana
	Kashaya	Kashaya, Amla	Ruksha	-	Pitta-anila Kopana	-
	Madhur	Madhura	-	-	Pitta hara	-
Matulunga	Kesara	-	Laghu	-	-	Rochana, Deepana, Hrudya

Table No. 2 - Bhav prakasha Nighantu[3]

Drug Name	Bheda	Rasa	Anurasa	Guna	Doshagnata	Karma
Amra	Apakwa	-	-	-	-	-
	Pakwa	Madhura	Kashaya	Snighda, Guru, Sheeta	Vatahara, Shleshma Vardhana, Apittala	Vrushya, Balaprada, Shukra Vivardhana
Amaratak	-	-	-	-	-	-
Lakucha	-		-	Guru, Ushna	Tridoshakrat	Vishtambhakrut, Shukra-Agni Nashana, Netrayorahitam
Karamarda	-	Amla	-	Guru, Ushna	Kapha Prada	Ruchya, Raktapitta Hara, Trushna Hara
Vrukshamla	Ama	Amla	-	Ushna	Vatahara	-
	Pakwa	Amla, Katu	-	Laghu, Ruksha, Ushna	Kapha Vatakara	Samgrahi, Rochana, Deepana, TrushnaArshas-GrahaniGulma-ShulaHrudroga Hara
Amlavetasa	-	Atiamla	-	Laghu, Ruksha	Pittala	Bhedana, Deepana, Lomaharshana, Vinmutra Doshaghna, Hrudroga-ShulaGulma-PleehaUdavarta-HikkaAnaha Hara
Badara	-	-	-	Guru, Ushna	Vatahara, Kapha-pittakara	Ruchyam, Bhedana, Shukrala, Brumhana, Grahi,

						Daha-Rakta Kshaya-Trushna Hara
Dadima	Madhura	Madhura		Laghu, Snigdha	Tidoshagna	Tarpana, Grahi, Shukrala, MedhaBala Prada, Trushna-DahaJwara-HrudrogaKanta Roga Hara
	Swadamla	-	-	-	Kinchitpittakara	Deepana, Ruchya
	Amla		-	-	Pittajanaka	-
Matulunga	-	-	-	Laghu	-	Deepana, Kanta Shodhana, Jihva Shodana, Hrudaya Shodana, Raktapitta-ShvasaKasa-AruchiTrushna

Phytochemical Analysis-

Table No 1. Results obtained in preliminary phytochemical screening

S. No.	Test	Inference
1	Alkaloids	-
2	Steroids	-
3	Carbohydrate	+
4	Tannis	+
5	Flavonoids	-
6	Saponins	+
7	Terpenoids	-
8	Coumarins	+
9	Phenol	+
10	Caboxylic Acid	-
11	Amino Acids	+
12	Resins	+

13	Quinones	-

Table No 2. Normal presentation of Preliminary phytochemical screening

Tests	Colour if positive	Alcoholic Extract
Alkaloids		
Dragendroff's test	Orange red precipitate	Purple color
Wagners test	Reddish brown precipitate	Reddish brown precipitate
Mayers test	Dull white precipitate	Light pink color
Hagers test	Yellow precipitate	Brown color
Steroids		
Liebermannbuchard test	Bluish green colour	No Bluish green colour
Salkowski test	Bluish red to cherry red color in chloroform layer and green fluorescence in acid layer	No Bluish red to cherry red color in chloroform layer and green fluorescence in acid layer
Carbohydrate		
Molish test	Violet ring	Violet ring
Fehlings test	Brick red precipitate	Brick red precipitate
Benedicts test	Red precipitate	Red precipitate
Tannins		
With FeCl3	Dark blue or green or brown	Dark blue to black colour
Flavanoids		
Shinoda's test	Red or pink	Dark pink colour

Table No 3- PHYSICO-CHEMICAL EVALUATION

S. No.	Parameters	Drug
1	Foreign matter	2.1%
2	Total Ash	7.5%
3	Loss on Drying	11.9%
4	Acid Insoluble Ash	1.22%
5	Alcohol soluble Extractive	8.8%
6	Water soluble Extractive	10.67%
7	pH Value	6

DISCUSSION

DISCUSSION ON HRUDYA MAHAKASHAYA:

After analyzing the concepts of Hrudaya and Hrudaya, the probable mode of action of Hrudaya Mahakashayas can be understood easily. All Hrudaya Mahakashayas Dravyas are Amla Rasa Pradhana and possess Ushna-Snigdha Guna and Vata-Kapha Hara property except for Amra which is Kapha Vardhaka.[31] The Guna Dharma of Amla Rasacan be assumed to be the same as the Guna Dharma of Hrudaya Mahakashayas. Thus, the Guna-Karma of Amla Rasa can be considered similar to the Guna-Karma of Hrudaya Mahakashayas, as all of them possess Amla as Pradhana Rasa except Amra.[32]

UNDERSTANDING HRUDROGA WITH THE BACKGROUND ON CONCEPTS OF HRUDAYA:

Stress and anxiety being the main predisposing factors, the morbidity and mortality due to cardiovascular diseases is increasing globally. Conventional approaches are competent in the management of critical conditions like MI. The established therapeutic approach of the conditions like hypertension, hyperlipidemia, coronary artery disease is not cost effective and to understand the basic pathophysiology of CVD on Ayurvedic parlance is the need of the hour.[33] Influence of Manas in the manifestation of Hrudroga, its pathophysiology and treatment are to be analyzed further in detail within the concepts of Hrudya.

DISCUSSION ON MANASIKA NIDANA PURVAKA SAMPRAPTI OF HRUDROGA AND CHIKITSA:VATAJA HRUDROGA:

The main Manasika Nidanas mentioned in VatajaHrudroga include Shoka, Bhaya, Trasa and Chinta which aggravate Vata Dosha and causes Vaigunya in Rasavaha Srotas. Rasavaha Sroto Dushti is also caused due to Atichintana. Chakrapani mentions that the emotions like Chinta, Dukha, Avesha can cause Hrudaya Peeda.[34] Thus, Shokaadi Nidanas cause the aggravation of Vata at the level of Hrudaya causing Rasa Kshaya and Ojo Kshaya. Thus, Santarpana Chikitsa is to be employed.

PITTAJA HRUDROGA:

Krodha is the main predisposing factor here which is both Kha Vaigunyakara and Srotodustikara Nidana leading to aggravation of Pitta. In particular, Sadhaka Pitta is aggravated afflicting both Hrudaya and Manas causing Pittaja Hrudroga. Even here the extent of Rasavaha Sroto Dushti is less when compared to Kaphaja Hrudroga. Krodha defined as emotion to inflict others has an influence on Hrudaya to a greater extent.[35] Therefore, Adravyabhoota Chikitsa and Hrudya Karma are to be adopted which means psychological components are disturbed to a greater extent by Sadhaka Pitta.

KAPHAJA HRUDROGA:

The Manasika Nidana involved in the pathology of Kaphaja Hrudroga is Achintana. Achintana is Brumhaneeya or Kapha Kara. Achintata is indicative of Tamo Avruta Manas. The severity of Rasa Dushti and

presentation of the Disease is more due to Samyata in Dosha and Dushya. Chakrapani states that in Kaphaja Hrudroga, Achintata acts as both Dosha Prakopaka Nidana and Vaigunyakara Nidana in Hrudayasthita Manas, as it matches with Rasavaha Sroto Dushtikara Nidanas. Thus, Apatarpana Chikitsa is to be employed.[36]

CHIKITSA OF HRUDROGA:

The practicability and applicability of Hrudya Mahakashaya in Hrudroga is comparatively very less. In Brihattrayis, Hrudya Mahakshaya Dravyas are found in combination in some of the Yogas and rarely Eka Dravya Prayoga is mentioned underHrudroga Chikitsa. For example, Dadimadi Churna is adviced in Vataja Hrudroga.Swadu Dadima – in Pittaja Hrudroga

Pakwa Amra – Suddha Vataja HrudrogaMatulunga – Vataja-Kaphaja Hrudroga.

DISCUSSION ON THE CONCEPT OF HRUDYA

The commentators have expressed diverse connotations on the term Hrudaya as Hrudaya Priya, Hrudaya Hita, Hrudaya Tarpana, Hrudaya Tat Sthita Sroto Shuddhikara, Hrudayaya Manase Hitam, Ojovruddhi Kara, Mana Priya, Mano Anukulakara and Prarthaneeyaunder various contexts of treatises.[37] Based upon these definitions and their context of mentioning, the phenomenon of Hrudya can be understood in a simpler way as-

- That which is Hita to the Hrudaya or Manas
- That which is Priya to the Hrudaya or Manas
- That which is both Hita and Priya to Hrudaya and Manas.

DISCUSSION ON THE BASIS OF RESULTS OF PHYTOCHEMISTRY, PHARMACOGNOSTICAL ANALYTICAL STUDY

DISCUSSION ON THE BASIS OF PRESENCE OF CARBOHYDRATE-

On analytically it was observed that Carbohydrate was present in the given samples ofDrugs/Fruits of Hrudaya Mahakashayas. Many studies have already proven the role of Carbohydrate in the Heart Health. According to J. Mann et.al.[38] The effect of carbohydrates on lipids and lipoproteins has dominated discussions regarding the amounts and classes of carbohydrate likely to reduce cardiovascular risk. While there is no doubt that increasing total carbohydrate at the expense of fat, especially saturated and trans fatty acids in the Western diet, will result in reduction of total and low-density lipoprotein (LDL) cholesterol, concern has been expressed that other predictor of lipoprotein-mediated cardiovascular risk may be adversely affected by substantial increases in total carbohydrate.[39]

DISCUSSION ON THE BASIS OF PRESENCE OF TANNINS

Tannins have cardioprotective activity via stabilization of pericardial tissue, inhibition of enzymatic degradation of elastin and reduction of the calcification of glutaraldehyde- fixed aortic wall. Hydrolysable

tannins, in particular, have anti-ischemic activity and an endothelium dependent vasorelaxant effect through the interplay of different factors such as cyclooxygenase pathway activation, TNF-alpha inhibition, endothelial nitric oxide synthase activation, and scavenging of free radical and reactive oxygen species.[40] It was shown that extracts and purified tannins of Geum japonicum L. (hydrolysable tannins) caused NO- and cGMP mediated potent vasorelaxation in rat aortic rings that had been pre-contracted with the α1-adrenergic receptor agonist phenylephrine.

DISCUSSION ON THE BASIS OF PRESENCE OF COUMARINS

Coumarin based anticoagulants are effective in the treatment and prevention of arterial and venous thrombosis. Nowadays, the main clinical use of coumarins based anticoagulants is the prevention of stroke or systemic embolism in patients witharterial fibrillation, which is one of the most common cardiac disorders. Coumarins are also known to possess anti-oxidant property, which attributes to direct scavenging of reactive oxygen and nitrogen species (ROS and RONs).[41] One important mechanism through which this is achieved is by donating hydrogen to free radicals in its reductionto nonreactive species.

DISCUSSION ON THE BASIS OF PRESENCE OF SAPONINS

During the analytical study it was observed that the samples of Hrudaya Mahakashayas in the lab exhibit the presence of Saponins. Hyperlipidemia has been defined as elevated cholesterol and triglycerides levels in plasma, and it represents one of the major risk factors associated with coronary heart disease.[42] The incidence of hyperlipidemic has increased worldwide because of an augmented fat consumption. Saponins have hypolipidemic effect, due to this hypolipidemic effect Saponins act asa cardioprotective. In research study it was found that saponins have anti-inflammatory action too. It reduces the inflammation of heart vessels and act as a cardioprotective.

DISCUSSION ON THE BASIS OF PRESENCE OF VITAMIN C

The drugs mentioned in Hrudaya Mahakashayas in drug review, as is a proven rich source of anti-oxidants. This finding matches with the Hrudaya property, which means protecting and promoting heart health claimed by our ancient Acharyas.[43] Researcheson such drugs which are mostly organ targeting with minimal toxic effects is the need of the hour. Most of them like Mango, Dadima, Lemon, Plum etc. are the cheapest and easily available dietary fruit can play a major role in the treatment of Hrudroga in a preventive way, as oxidative stress forms the main reason for CVD.

Many research studies have proven that most of them has anti-oxidant, anti- inflammatory, anti-apoptotic, anti-atherosclerotic and hemodynamic properties.[44] Thus, the mechanism of these fruits acting as free radical scavenger in oxidativestress, has shown to prevent and reverse CVD.

CONCLUSION

Hrudaya is the seat of Buddhi and Chetana as it controls Shareera, Manas and Indriyas. Thus, Hrudaya is considered as a psycho-somatic entity, if afflicted all the Prakriti Sharirika and Manasika functions are hampered leading to the manifestation of Hrudrogas. Hrudaya is that phenomenon or a Dravya which is both Hita and Priya to Hrudaya and its Ashrayi Manas. All Hrudaya Mahakashayas Dravyas are Amla Rasa Pradhana. The Guna Dharma of Hrudya Mahakashayas can be implicated to be the same as that of Amla Rasa. Since Hrudya Karma has been elucidated in relation to its Rasa. Amla Rasa is the best among the Hrudaya Dravyas, as it is Tarpaneeya to Hrudaya and Prarthaneeya to Manas by nature. Amla Rasa and Rakta Dhatu are closely related to each other in terms of Panchabhautiki, Guna, influence on Dosha and Hrudaya, Nidana, Roga and Chikitsa thereby contributing their combined effect in understanding the mechanism of Hrudaya Karma. Presence of Carbohydrate, Saponins, Vitamin C, Coumarins etc. in Analytical study also exhibit that all these Drugs/ Fruits mentioned in Hrudaya Mahakashayas, may exhibit the role as Cardiotonic, Antihyperlipidemic action and also in other Cardiovascular Disorders, due to their Anti-Oxidant, Anti-inflammatory actions/ properties.

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