

Hridya- Cardio Tonic Drugs According to Charaka Samhita

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Abstract— The cardio tonic drugs are the drugs which increase cardiac contractile functions during heart failure. The heart failure is a pathological state in which cardiac output is inadequate to provide the minute volume needed by the body. Blood supply of the peripheral tissues is provided by the congested load of the heart. The end diastolic volume of the ventricles, so called preload, which depends on the circulating blood volume, cardiac blood return, efficiency of the atrial contraction etc. The after load depends on the pressure in aorta and pulmonary arteries, mass of the functioning cardiac muscles, sizes of the ventricular cavities. During systolic heart failure pumping function of the ventricles is markedly decreased, during systole ventricles can't develop sufficient wall tension to pump out an appropriate volume of the blood. In this case there is a deterioration of diastolic relaxation or diastolic feeling of the ventricles. Thus, during heart failure, deterioration of three important hemo dynamic factors can be noticed viz; decrease in cardiac output, increase in after load, increase in preload. According to the above mentioned pathogenic mechanisms of heart failure, the main goals of the treatment are; increase in cardiac contraction force (cardiotonic drugs), reduction of preload and afterload (vasodilators, diuretics, ACE – inhibitors), regulation of neuro-humoral system and prevention of heart remodeling (β - adrenoblockers, ACE - inhibitors). Cardiotonic drugs as per modern science are; Cardiac glycosides- Strophantine, Digoxin, Corglycon. Sympathomimetic drugs- β - adrenomimetics –Prenalterol, Xamoterol. Catecholamines and their derivatives – Dopamine, Dobutamine. Phosphodiesterase inhibitors- Bipyridine derivatives – Amrinone, Milrinon, Imidazole derivatives – Enoximone, Piroximone, Fenoximone, Benzimidazole derivatives - Pimobendane. Cardiotonic drugs with other mechanism are; Reduction of tachycardia, absence of increase in oxygen demand of myocardium, reduction of central venous pressure, absence of action on AV node, efficiency during oral route of administration and long duration of action, cardiac glycosides are drugs of plant origin, don't contain nitrogen, increase contraction force of the myocardium, without an increase of oxygen demand. Extracardial symptoms of intoxication Dyspeptic symptoms: 1. Anorexia 2. Vomiting, nausea 3. Abdominal spastic pains, because of increase of vagus tone. Neurological symptoms include 1. Headache, fatigue 2. Deliriums, convulsions 3. Micro-macropsia, xantopsia. The present topic deals with Hridya(Cardiotonics) drugs along with their pharmacological actions. The most of the drugs are having Amla Rasa(Sour taste), Dipana(Appetizer), Laghu(Light- easily digestible), palatable. These drugs will help to sustain healthy digestion and lower the cholesterol and triglyceride levels. The most of the sour drugs have the anti oxidant properties which helps to support lipid metabolism and also healthy neurological systems.

I. INTRODUCTION

Cardio tonic drugs are the drugs which increase cardiac contractile functions during heart failure. Blood supply of the peripheral tissues is provided by the congested load of the heart. The end diastolic volume of the ventricles, so called preload, which depends on the circulating blood volume, cardiac blood return, efficiency of the atrial contraction etc. The afterload depends on the pressure in aorta and pulmonary arteries, mass of the functioning cardiac muscles, sizes of the ventricular cavities. During systolic heart failure pumping function of the ventricles is markedly decreased, during systole ventricles can't develop sufficient wall tension to pump out an appropriate volume of the blood. In this case there is a deterioration of diastolic relaxation or diastolic feeling of the ventricles. Thus, during heart failure, deterioration of three important hemo dynamic factors can be noticed viz; decrease in cardiac output, increase in after load, increase in preload. The cardiotonic drugs as per modern science are; Cardiac glycosides- strophantine, digoxin, corglycon. Sympathomimetic drugs- β - adrenomimetics –Prenalterol, Xamoterol, Catecholamines and their derivatives – Dopamine, Dobutamine. Phosphodiesterase inhibitors- Bipyridine derivatives – Amrinone, Milrinon, Imidazole derivatives –

Enoximone, Piroximone, Fenoximone, Benzimidazole derivatives - Pimobendane. The cardiotonic drugs with other mechanism are; Reduction of tachycardia, absence of increase in oxygen demand of myocardium, reduction of central venous pressure, absence of action on AV node, efficiency during oral route of administration and long duration of action, cardiac glycosides are drugs of plant origin, don't contain nitrogen, increase contraction force of the myocardium, without an increase of oxygen demand.

II. DISCUSSION

According to Acharya Charaka^[1] he mentioned the ten Hridya drugs. Viz; Amra, Amrataka, Lakucha, Karamarda, Vrukshamla, Amlavetasa, Rajabadara, Badara, Dadima, Matulunga.

AMRA^[2]. Botanical Name- *Mangifera indica* Linn, Family- Anacardiaceae

Pharmacological Actions- The flower of the mango is *Sheeta Virya*(Cold in potency), *Atisaragna*(cures diarrhoea), *Kapha* and *Pitta* diseases, *Prameha*(Urinary disorders), *Asragdhara*(Diseases caused by vitiation of Rakta), The flowers are *Ruchiprada*(Promotes taste perception), *Grahi*(Absorbent), and increases *Vata*. The *Taruna Phala*(Immature mango) is peeled and cut into pieces and dried under heat of the sun. Its taste is *Amla*(Sour),

Madhura(Sweet), *Kashaya*(Astringent), *Bhedana*(Softens the stool), and helps to control *Kapha* and *Vata*. The *Pakwa Phala*(Ripen fruit) is *Madhura*(Sweet), *Kashaya*(Astringent), *Vrishya*(Aphrodisiac), *Snigdha*(Demulcent), *Balakara*(Tonic), *Sukhapradam*(Gives comforts), *Guru*(Heavy), *Vatahara*, *Hridya*(Good for heart), *Varnya*(Gives complexion), *Sheeta Virya*(Cold in potency), promotes appetite, *Kapha* and semen. The mango fruit ripen on its own on tree is *Guru*(Heavy), *Madhura*(Sweet), *Amla*(Sour), subsides *Vata* and aggravates *Pitta*. The mango fruit made ripen artificially after plucking it out from the tree reduces *Pitta*. It is devoid of *Amla*(Sour) and is full of *Madhura Rasa*(Sweet in taste). *Balya*(Strength giving), *Laghu*(Light), *Sheeta Virya*(Cold in potency), *Supachya*(Easily gets digested), laxative, controls *Vata* and *Pitta*. Mango juice taken and filtered in a vessel is *Balakara*(Tonic), *Guru*(Heavy), *Sara*(Laxative), reduces *Vata*. It is *Hridya*(Beneficial for heart), *Tarpanakara*(Satisfying), *Brimhana*(Nourishing), Increases *Kapha*. The cut pieces of mango fruit is *Guru*(Heavy), *Ruchya*(Tasty), *Durjara*(Difficult to digest), *Madhura*(Sweet), nourishing, *Sheeta Virya*(Cold in potency), and reduces *Vata*. If mango fruit is used along with milk is *Ruchya*(Tasty), *Brimhana*(Nourishing), *Balya*(Tonic), reduces *Vata* and *Pitta*, *Vrishya*(Aphrodisiac), *Varnya*(Promotes complexion), *Guru*(Heavy), *Sheetala*(Cooling). If mango fruit is taken in excess, it subsides digestive power, aggravates *Vishamajwara*(Alternate fever), diseases of *Rakta* and obstructed intestines. It causes eye diseases. To relieve such symptoms, *Shunthi*(Ginger), along with *Sauvarchala Lavana* is used. Ripe mango juice when dried in sun heat, after spreading it on a cloth, it is called as *Amravarta*, which relieves *Trishna*(Thirst), *Vamana*(Vomiting), vitiated *Vata* and *Pitta* acts as a laxative and *Ruchikara*(Promotes taste). It gets *Laghu*(Light) when exposed to sun. The seed kernel of mango is *Kashaya*(Astringent), *Amla*(Sour), and *Madhura*(Sweet), and pacifies *Vamana*(Vomiting), *Atisara*(Diarrhoea), and *Daha*(Burning sensation). The leaf of mango tree is taste promoter, *Grahi*(Absorbent) and subsides *Kapha* and *Pitta*.

AMRATAKA^[3] - Botanical Name- *Spondias mangifera* Willd, Family- Anacardiaceae

Pharmacological Actions- The *Amrataka* is *Shukravardhaka*(Increases semen), *Dipana*(Appetizer), *Raktapittakara* and *Kapahakara*(Aggravates Bleeding diseases and *Kapha Dosh*), It is *Sheeta Virya*(Cold in potency), *Kashaya*(Astringent), *Madhura*(Sweet) in taste, *Kinchit Vatavardhaka*(Mild aggravates *Vata Dosh*), and is *Guru*(Heavy).

LAKUCHA^[4] - Botanical Name- *Artocarpus lakoocha* Roxb, Family- Moraceae

Pharmacological Actions- The *Lakucha* is *Kashaya*(Astringent), *Madhura*(Sweet) *Ushna*(Hot in potency), *Guru*(Heavy), aggravate *Pitta Dosh* and *Rakta*, subsides *Vata Dosh*. *Visthambhakara*(Causes constipation), *Shukravardhaka*(Increases semen), *Dipana*(Appetizer).

KARAMARDA^[5] - Botanical Name- *Carissa carandas* Linn, Family- Apocynaceae

Pharmacological Actions- The *Karamarda* is *Amla*(Sour), *Trishna Shamaka*(Subsides excess thirst), *Ruchikaraka*(Taste promoter), *Pittakara*(Aggravates *Pitta Dosh*), when ripe it is *Madhura*(Sweet), *Sheeta Virya*(Cold in potency), alleviates *Raktapitta*(Bleeding disorders).

VRUKSHAMLA^[6] - Botanical Name- *Garcinia combogia*, Family- Guttiferae

Pharmacological Actions- The *Vrikshamla* is *Amla*(Sour in taste), *Ushna Virya*(Hot in potency), *Ruksha*(Dry), *Dipana*(Appetizer), subside *Kapha Vata Dosh*s, *Trishna*(Excess thirst), *Arsha*(Haemorrhoids), *Grihani*(Sprue syndrome), *Shoola*(Pain), *Hridroga*(Cardiac ailments), *Krimi*(Worms infestation).

AMLAVETASA^[7] - Botanical Name- *Garcinia pedunculata* Roxb, Family- Guttiferae

Pharmacological Actions- The *Amlavetasa* is *Amla*(Sour in taste), *Ushna Virya*(Hot in potency), *Teekshna*(Penetrating), *Snigdha*(Demulcent), *Dipana*(Appetizer), relieve chronic diseases, *Shoola*(Abdominal pain), *Anaha*(Distention of the abdomen), *Vishambhahara*(Relieves constipation), *Vata* and *Kapha Dosh*s.

RAJABADARA^[8] - Botanical Name- *Zizyphus sativa* Gaern, Family- Rhamnaceae

Pharmacological Actions- The *Rajabadara* is *Madhura Rasa*(Sweet in taste), *Madhura Vipaka*(Sweet at post digestive effect), *Sheeta Virya*(Cold in potency), *Snigdha*(Demulcent), *Guru*(Heavy), *Bhedana*(Laxative), *Brimhana*(Weight promoting), *Kapha* and *Shukra Vardhaka*(Increase *Kapha* and semen), alleviate *Vata* and *Pitta Dosh*s, *Trishna*(Excess thirst), *Kshata*(Heals injury), *Raktasrava*(Bleeding diseases), *Kshayaroga*(Tuberculosis).

BADARA^[9] - Botanical Name- *Zizyphus jujuba* Lam, Family- Rhamnaceae

Pharmacological Actions- The *Badara* is *Kashaya*(Astringent), *Ushna Virya*(Hot in potency), *Laghu*(Light), *Grahi*(Absorbent), *Ruchikara*(Taste promoter), subsides *Vata Dosh*, aggravates *Kapha Dosh*.

DADIMA^[10] - Botanical Name- *Punica granatum* Linn, Family- Punicaceae

Pharmacological Actions- The *Dadima* is *Snigdha*(Demulcent), *Ushna Virya*(Hot in potency), *Hridya*(Good for heart), subsides *Pitta Dosh*.

MATULUNGA^[11] - Botanical Name- *Citrus medica* Linn, Family- Rutaceae

Pharmacological Actions- The fruit is *Swadu*(Palatable), *Amla*(Sour) in taste, *Hridya*(Good for heart), *Dipana*(Appetizer), *Laghu*(Light), *Raktapittahara*(Controls haemorrhage), *Kantha-Jivha-Hridaya Shodhaka*(Clears the throat-tongue-and good for heart), cure *Shwasa*(Dyspnoea), *Kasa*(Cough), *Trishna*(Thirst), *Hikka*(Hiccough), *Shoola*(Colic), *Vamana*(Acts as anti-emetic).

III. CONCLUSION

By the above discussion it is conclude that most of the drugs are having *Amla Rasa* (Sour taste), *Dipana*(Appetizer), *Laghu*(Light- easily digestible), palatable. These drugs will help to sustain healthy digestion and lower the cholesterol and triglyceride levels. The most of the sour drugs have the anti

oxidant properties which helps to support lipid metabolism and also healthy neurological systems. These cardio tonic drugs helps to increase cardiac contractile functions during heart failure. Blood supply of the peripheral tissues is provided by the congested load of the heart.

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