'SAMPURNA HRIDAY SHUDDHIKARAN'- AN AYURVEDIC PROCEDURE TO ESCALATE EXERCISE TOLARANCE CAPACITY IN CHRONIC HEART FAILURE PATIENTS.

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Summary

Group of 30 diagnosed Chronic Heart Failure (CHF) patients were exposed to Ayurvedic procedure to increase exercise tolerance capacity. Six Minute Walk Test (6 MWT) and Stress Test were the methods used to assess the results. Exercise tolerance capacity is juxtaposed and evaluated for pre treatment and post treatment group of patients to study the significance of Ayurvedic procedures in the treatment. In both the method, significant improvement in patients was observed, which proves the efficacy of Ayurvedic procedure in the treatment of CHF patients irrespective of age, sex and weight. Statistical analysis revealed significant improvement in pre and post measurement of 6 MWT (109.33±17.69 M) and stress test (115.36±15.47 Sec). From study it can be inferred that the Ayurvedic procedure Sampurna Hriday Shuddhikaran –SHS, (Snehan, Swedan, Hrid Dhara and Basti) plays an important role in improving the exercise tolerance capacity and stress capability of CHF patients finally resulting in to increased cardiac output.

Key words: SHS (Sampurna Hriday Shuddhikaran), CHF, 6 MWT, Stress Test.

Introduction

Cardiovascular disease is the world's leading cause of death and disability. Cardiac rehabilitation and secondary prevention programs for cardiovascular (cardiac) disease provide the most effective mean of decreasing morbidity and mortality[1]. Many healthcare providers are familiar with the benefits of cardiovascular rehabilitation for patients after myocardial infarction, angioplasty, intracoronary stent placement, coronary artery bypass surgery, and those with stable angina[2]. Costly treatments are increasing economic burden in socioeconomic patients in India. Substantial research has reported that, following a cardiac event, cardiac rehabilitation can promote recovery, improve exercise capacity and patient health, reduce various coronary artery disease risk factors and subsequently reduce hospitalization costs[3]. Along with cardiac rehabilitation application of Ayurvedic therapy will help to improve the life style and cardiac diseases. Ayurvedic therapy is proven to be effective in most of the heart related diseases. Due to low exercise tolerance capacity in current scenario, lower and middle age population is found prone to heart diseases. In CHF heart is unable to pump oxygen rich blood to body in adequate amount.

Sampurna Hridaya Shuddhikaran, adopted at Madhavbaug Ayurvedic Cardiac Rehabilitation Centre includes 'Snehan', 'Swedan', 'Hriday Dhara', 'Basti' as a part of Ayurvedic procedure along with the use of *T. Arjuna and* Til oil. *T. arjuna* have antianginal and cardioprotective effects. The cardioprotective effects of *T. arjuna* is thought to be because of antioxidant nature of several of the constituent like flavonoids and oligomeric proanthocyanidins, while positive inotropic effects may be because of the saponin glycosides. Til oil (Sesame oil) contains vitamin E, an antioxidants which lowers of cholesterol levels. It is also used as preventive medicine in blood pressure, stress and tension.

Material and Methods

We included patients with CHF who were admitted to the Madhavbaug Ayurvedic Cardiac Rehabilitation Center, Raigad (India). Ethical clearance was obtained from Ethical Clearance Committee and trial was initiated. Patients were consented, screened for inclusion and exclusion criteria and 30 patients were selected for study. Those patients who were eligible were enrolled in the study for 7 days.

Study Type : Interventional
Study Design : Cross-sectional study
Study Site : Madhavbaug Ayurvedic Cardiac Rehabilitation Center, Khalapur, Old Mumbai-Poona highway, Dist. Raigad, Maharashtra, India.
Study population : 30
Inclusion criteria : All patients of chronic heart failure entering the hospital with

1. Age between 25- 80 years
2. Giving informed consent for the therapy.

Exclusion criteria :

1. Age more than 80 years
2. Severe heart failure (NYHA grade IV)
3. H/O myocardial infarction in last 2 weeks
4. Severe joint disability which limits activity
5. Hepatic or renal failure
6. Pregnancy or lactation
7. Patients with the presence of specific medical disorders which require immediate treatment (e.g. fractures, infectious diseases, etc.)

Plant Material
Til oil and *Terminalia arjuna* bark herbal decoction was used for the treatment and was administered to the patients by rectal route after enema.

Prepration of decoction:
To the 5 gm of dried bark powder of *T.* A*rjuna,* 80 ml of saline water was added and the mixture was boiled till 1/4th of water remains giving rise to 20 ml of decoction used as single dose.

Preparation of Enema:
25 gm of powder in 400 ml water was boiled to evaporate water upto 100 ml.

Sampurna Hridaya Shuddhikaran Procedure:
Snehan ⟹ Swedan ⟹ Hrid Dhara ⟹ Basti
The initial stage consist of Til oil centripetal massage in strokes directed towards the heart, Til oil is known antioxidant and helps in cholesterol lowering and controls blood pressure.

Final stages consist of treatment with *T. arjuna* decoction which help in curing cardiac diseases.

Exercise tolerance capacity:

A. Stress Test

A cardiovascular history and physical examination should be performed by a physician on every patient referred for stress testing[4]. Stress exercise testing has become a well established procedure in the evaluation and management of patients with suspected or known coronary artery disease[5,6]. Patients were tested for stress test on treadmill for 9 min. speed was maintained at 1.6 km / hr for first minute, and then the speed was increased every minute by 1 km/hr till 5th minute, and lastly the speed was kept constant till 9th minute. Inclination of the treadmill is kept constant of 2 degree till 4th minute and then increased by 2 degree at every minute up to 9 minutes. Here patients were checked for their tolerance in seconds to trade mill conditions before and after the treatment.

B. Six Minute walk Test

The 6MWT is a practical simple test that requires a 100-ft hallway but no exercise equipment or advanced training for technicians[7]. The 30 subjects were used for the study procedure. Each of them was exposed for Stress Test and Six Minute walk Test. Results were recorded before start of the Ayurvedic procedure. The study was conducted for seven days. Procedure is carried out twice in a day (for 1 hr and 30 min) for all consecutive days. On admission to the study centre the subjects were assessed by six Minute walk test and Stress Test. The initial readings were noted down. All the 30 subjects were then given two setting of the study procedure every day. Heart rate and blood pressure monitoring was done every day before and after procedure. On the seventh day after completing the sixth sitting of study procedure, Six minute walk test and stress test was repeated in all subjects. Here patients were checked for their capacity to walk in meters, before and after the treatment.

Results and Discussion

The observations of stress test and six minute walk test are collected before and after the study procedure. Result showed that there is significant improvement in the patient's performance after Ayurvedic treatment as described earlier. Ayurveda based interventions can be synergistically utilized exclusively or with allopathic regimen, in the interests of patient-care. Despite limitations the results are convincing and encouraging enough to recommend the therapy for all types of cardiac ailments with symptomatic manifestations. We recommend that further cohort / case-control studies may be undertaken so as to validate the present findings with more accuracy.

Table 1. Improvement of patients in Six minute walk Test and Stress Test

Test	**Six Minute Walk Test (In Meter)**			**Stress Test (In Seconds)**		
	Pre Treatment	Post Treatment	Improvement	Pre Treatment	Post Treatment	Improvement
Observation	407±24.8	516.33±17.3*	109.33±17.7	353.17±35.7	468.54±33.5*	115.36±15.5

Data was analyzed by students 't' test. *P<0.05 significant compared with pretreatment group.

References

1. García-Porrero E, Andrés-Esteban E, de Pablo-Zarzosa C, et al. Preventive cardiology and cardiac rehabilitation. Rev Esp Cardiol 2010; Jan (63) 1: 40-8.

2. Julie S, MacMillan RN. Women and Cardiovascular Rehabilitation Programs. Topics in Advanced Practice Nursing e Journal 2001; 1(3).

3. O'Driscoll JM, Shave R and Cushion CJ. A National Health Service Hospital's cardiac rehabilitation programme: a qualitative analysis of provision. J Clin Nurs 2007; 16(10):1908-18.

4. NJ Fortuin and JL Weiss. Exercise stress testing. *Circulation* 1977;56;699-712.

5. Bruce RA, Hornsten TR: Exercise testing in evaluation of patients with ischemic heart disease. Prog Cardiovasc Dis 11: 371-390, 1969.

6. Bartel AG, Behar VS, Peter RH, Orgain ES, Kong Y: Graded exercise stress tests in angiographically documented coronary artery disease. Circulation 49: 348-356, 1974.

7. ATS statement: guidelines for the six-minute walk test. ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories. Am J Respir Crit Care Med 2002; 166(1): 111–117