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ROLE OF SET OF ASANAS IN PRIMARY PREVENTION OF CHF – A CASE REPORT

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ABSTRACT

Heart failure (HF) is a common clinical syndrome and has become a global pandemic affecting at least 26 million people worldwide and is increasing in prevalence. The burden is growing at an alarming rate in India also. It is a complex clinical syndrome characterised by the reduced ability of the heart to pump. Medical expenditures are considerable in such circumstances and will increase dramatically with time. Despite the significant advances in therapies and prevention, mortality and morbidity are still high and quality of life poor. Yoga which is originated and developed in India is being increasingly used as adjuncts to modern medicine for treatments in heart ailments. Yoga and Lifestyle change may have a role in revitalizing the cardiac health in such condition and the present article focuses on the same. Case history: A 37year old male patient presenting complaints of Chronic Heart Failure (CHF) mainly; dyspnea on exertion, palpitations and giddiness since six months came to the clinic. He was reluctant for any medical intervention and wanted to opt for Primary prevention technique to improve his cardiac health. Proper Yogic Counseling and lifestyle changes were advised to the patient and were taught set of asana and pranayama potentially beneficial in such conditions. He continued to practice for a year and reported back, investigations were repeated. MET Value increased from 7.5 to 10 and Vo2 Max (mL/kg/min) improved from 24 to 32 which is remarkable improvement. Conclusion: Hence, it can be recommended that yoga can be an effective adjunct therapy in CHF and further studies on more samples can be used to confirm these findings and to better understand the mechanisms behind such beneficial effects in such patients.

Keywords: Chronic Heart Failure (CHF), cardiac health and yoga

INTRODUCTION

Heart failure (HF) is a common clinical syndrome and a health priority internationally. It has become a global pandemic affecting at least 26 million people worldwide and is increasing in prevalence. The burden is growing at an alarming rate in India also.

HF is a complex clinical syndrome characterised by the reduced ability of the heart to pump and/or fill

with blood. From a physiological point of view, HF can be defined as an inadequate cardiac output to meet metabolic demands or adequate cardiac output secondary to compensatory neurohormonal activation (generally manifesting as increased left ventricular filling pressure).[3]

HF health expenditures are considerable and will increase dramatically with an ageing population. Despite the significant advances in therapies and prevention, mortality and morbidity are still high and quality of life poor. Yoga which is originated and developed in India is being increasingly used as adjuncts to modern medicine for treatments in heart ailments. Yoga and Lifestyle change may have a role in revitalizing the cardiac health in such condition.

Case History

A 37 year old male patient, working as IT professional in Pune, visited to Pandurang Cardiac Care Clinic, Dhankawadi, Pune. Patient was having complaints of Dyspnea on Exertion (DOE) grade 1, palpitations, giddiness, disturbed sleep, snoring, constipation, weight gain and feeling of general lethargy; since 6 months. There were no other major cardiac related symptoms. He was concerned about his condition; as his grandfather and father both had history of Cardiac ailment. The patient had never taken any treatment for the presenting symptoms and wanted to avoid the same. He wanted to opt for a healthy lifestyle by changing his daily regime as per Yoga and Ayurved.

Preventive Intervention was determined in form of Primary prevention technique to improve his cardiac health. Set of Asana and pranayama were prescribed to the patient to be performed daily empty stomach in the morning along with a daily diet regime.

The role of the set of asana were explained to the patient and how to perform it step wise was taught along with the breathing pattern, timing to hold the posture and its repetitions. Even the pranayama technique was illuminated similar way. A demo of the set of asana with instructions was given in form of CD, so that the patient will be able to perform it at home.

It was advised to the patient to perform the asana and pranayama for 45-60 minutes at least 5 times a week for better results, preferably in the morning empty stomach. The health of the patient was monitored every 3 months, if the health of the patient deteriorated to be shifted to medical treatment. A daily diary was told to maintain which was checked at every 3 months span; changes in lifestyle advised accordingly. No medical intervention was needed in the said period.

Administration of Intervention:

Following set of asana were advised to the patient.[5]

Duration

- Maintain each asana posture for a span of 20 seconds likewise 2 repetitions for each asana. The total duration of the schedule was 45-60 minutes.

Table A:

Sr.no.	Name of asana / Pranayam and Pictorial representation	
1.	 TADASANA	 UTKATASANA

2.	 VEERABHADRASANA	 TRIKONASANA
3.	 ARDHAMATSENDRASANA	 PASHIMOTANASANA
4.	 SETUBADHASANA	 MARJARASANA
5.	 BHUJANGASANA	 SHAVASANA

Table B:

Sr.no.	Name of Pranayam	Pictorial representation	Duration
	LIST OF PRANAYAM		
1.	NADI SHODHANA PRANAYAM		10 rounds 1 cycle 20 seconds each depending upon the breath holding capacity.
2.	BHRAMARI PRANAYAM		20 rounds 1 cycle 10 seconds each depending upon the breath holding capacity.

Table 1: ON EXAMINATION:

Sr.No.	On Examination	BT (Before Therapy)	AT (After Therapy)
1	Heart Rate (HR)	90/min	75/min
2	Blood Pressure (BP)	142/90 mm of Hg	118/74 mm of Hg
3	SPO2	97%	98%
4	Height	172 cms	172 cms
5	Weight	80 kgs	74.2 kgs
6	Body Mass Index (BMI)	27.0	25.1
7	RS	AEBE clear	AEBE clear
8	CVS	S1S2 normal	S1S2 normal
9	P/A	Soft	Soft

ASSESSMENT OF DYSPNEA:

Modified Medical Research Council (mMRC) Dyspnea Scale:

Symptom severity - Walking assessed on level ground.

Table 2:

S.No.	Symptom Severity	Grade
1	Dyspnoea only with strenuous exercise	0
2	Dyspnoea when hurrying or walking up a slight hill	+1
3	Walks slower than people of the same age because of dyspnoea or has to stop for breath when walking at own pace	+2
4	Stops for breath after walking 100 yards (91 m) or after a few minutes	+3
5	Too dyspnoeic to leave house or breathless when dressing	+4

Table 3: DIAGNOSTIC ASSESSMENT:

Sr.No.	Investigations	BT (Before Therapy)	AT (After Therapy)
1	ECG	WNL	WNL
2	Stress Test - Modified Bruce Protocol	Negative for ischemia but stopped at 12mins complaint shortness of breath.	Negative for ischemia also completed the total 15 mins
3	MET Value	7.5	10
4	Vo2 Max (mL/kg/min)	24	32
5	Total Cholesterol	190	150
6	Triglycerides	140	128
7	HDL	35	42
8	LDL	80	70
9	BSL (R)	130	124

Table 4: FOR ASSESSMENT OF STRESS TEST:

MODIFIED BRUCE TREADMILL PROTOCOL FOR STRESS ECG			
STAGE	DURATION (in mins)	INCLINATION	SPEED (Km/hr)
1	3	0	2.7
2	3	5	2.7
3	3	10	2.7
4	3	12	4.0
5	3	14	5.4

DISCUSSION

ASANA: Cardiac muscle is partly controlled by autonomic nervous system and influenced by hormones

like adrenaline and nor adrenaline, circulating in the blood. Although the cardiac function is involuntary in nature, it is influenced due to emotional and attitudinal changes and moods.

The set of Asana prescribed probably effects the body in three ways, vagal nerve stimulation, reduction in perceived stress, and musculoskeletal stimulation. By massaging the vagal nerve directly, asana may promote parasympathetic activation thus leading to decreased heart rate, blood pressure, similar metabolic and psychological benefits resulting in an improved outcome. Yoga has also been associated with decreased levels of depression, improved quality and quantity of sleep and weight reduction in the form of reduced visceral fat.[4]

Nadi Shodhan Pranayam:

It was advised prior to Bhramari Pranayama. This is practiced by breathing through the alternate nostrils. This exercise is designed to deactivate ida and Pingala nadi, and cause the prana flows through Sushumna Nadi primarily, thus activating the Kundalini. Vayu cannot enter the Nadis if they are full of impurities. So first of all, they should be purified and then any kind of Pranayam should be practiced. Calmness and mental relaxation are felt immediately after the practice of this pranayama. It improves the function of digestion and sleep. It removes the blockages in nerve conduction and corrects the neural functions and therefore is essentially practiced before other pranayama.[2]

Bhramari Pranayam:

Bhramari Pranayama is practised by doing a humming sound just like a bee. Eyes and ears are closed during the rounds. It tranquilizes the mind of practitioner giving a blissful feeling. It helps in integration of internalized awareness and extra-sensory perception for longer time. Reduces the instability of mind and calms it down. Beneficial in those suffering from stress, high blood pressure and cardiac disorders.[2]

- At the end of the study it was noticed that the systolic pressure of the patient was reduced from 142 to 118 and the diastolic from 90 to 74. BMI altered from 27 to 25.1
- MET Value increased from 7.5 to 10 and Vo2 Max (mL/kg/min) improved from 24 to 32 which is remarkable improvement.
- This all is achieved without any medical intervention. So not only the patients with cardiac ailments can practice it but even every individual can opt for this kind of change in lifestyle.

Patient Perspective:

Yoga has great potential as an adjunct therapy as it is cost effective and may not have any complications when practiced in a proper manner and under expert guidance. Many patients are nowadays also opting to try out yoga either before starting medications, or in combination with medication.

After a year the patient reported that Dyspnea on Exertion (DOE) had totally reduced, no palpitations, giddiness had disappeared within a month, patient had sound sleep for 7 hours, snoring was reduced, motions were clear and feeling of general wellbeing was observed. In fact he observed that many of his colleagues at work had noticed the positive changes in his attitude and decision making capabilities were improved. Also could handle the stressful situations with much calm and patience. Patient was really happy as his BP had reduced and had lost weight from 80 kgs to 74.2 kgs.

Declaration Of Patient Consent:

The authors declare that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent of the clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity.

CONCLUSION

From the discussion we can conclude that there was significant reduction in the blood pressure and BMI similarly remarkable improvement was seen in the MET value and VO2Max values. This was achieved without any other medical intervention and only yoga therapy. This case study proves that cardiac ailments related to stress can be treated without intervention with Yoga. More similar studies can be conducted to

generalize and extrapolate the findings for the population.

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