



# ROLE OF INTEGRATIVE MEDICINE IN PREVENTION AND REHABILITATION OF CARDIOVASCULAR DISORDERS

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**Abstract:** Cardiovascular disease (CVD) is a major cause of disability and premature deaths globally. WHO estimated nearly 17.9 million deaths globally were due to CVDs in 2019, representing 32% of all global deaths? Cardiovascular Disorders are a group of diseases that includes coronary heart disease (CHD), peripheral arterial disease, rheumatic heart disease, deep vein thrombosis, and pulmonary embolism (WHO, 2012).

In the current scenario, the role of the integrative system plays a major role in the management and prevention of major Cardiovascular Disorders along with the most sophisticated modern treatment and medications. All systems of medicine aim to maintain the equilibrium between the physical, social, mental, and spiritual well-being of all living beings.

Along with surgical intervention and medication, lifestyle modification through Cardiac protective Diet and Specific Yoga Protocol and Proper awareness about prevention of disease also helps to prevent precipitating factors like Diabetes Mellitus, Hypertension Dyslipidemia which are the main causative factors for cardiovascular diseases

## 1. INTRODUCTION

The major cause of premature deaths and morbidity worldwide is cardiovascular disease (CVD), with coronary heart disease being the commonest [1]. Although percutaneous interventions, bypass surgery, and drugs are effective, re-hospitalization, revascularisation, and recurrence of cardiac events are not uncommon.

Worldwide, cardiac rehabilitation and lifestyle modifications have been proven effective in preventing disease recurrence [2]. We have used an integrative medicine model as a part of cardiac rehabilitation (CR) for the physical, social, mental, and spiritual well-being of the individual.

Alongside the conventional management of acute coronary syndrome, cardiac rehabilitation is initiated through the Integrative medicine model.

## 2. MATERIALS AND METHODS

As a part of CR, 765 inpatients of acute coronary syndromes were counseled using the Integrative medicine model [3] between 2017-2021 during their period of hospitalization.

The various modalities utilized for rehabilitation were counseling on lifestyle modification, specific Yoga as physical activity, necessary dietary advice factoring for age, gender, and tastes, and adherence to drugs. The rehabilitation program is conducted in two phases, in the first phase short counseling on prevention, dietary advice, Yoga-based physical activity prescription and counseling on its benefits, breathing exercises, loosening exercises, and *Pranayama* is given to both, patient and spouse.

On commencement of the CR, Patients are been educated about the Prevention of CVDs. Queries of the patients regarding rest, physical activities, etc are been answered. Alongside, awareness regarding the causative factors of CVDs and other lifestyle diseases are been discussed. Suggestions to keep an eye on the comorbidities as well motivating them to follow Diet, physical activity, and to quit unwanted habits like Smoking, Alcoholism, etc are also advised. The impact of positive family history is been discussed and awareness regarding the necessity of the right diagnosis at the right time is also discussed.

Dietary advice includes a High Fibre, low-Fat diet with medium carbohydrate intake [4]. The amount of dietary intake depends upon the physical status of the patient. Salt intake has been restricted along with oil intake, where the latter is been reduced to half the amount. A cardiac protective diet, such as Nuts, Olive oil, Avocado, Whole grains, etc is been suggested where the patients have advised the intake of Foods with High-Density Lipoprotein (HDL) which is been categorized as “Good Cholesterol” [5]. Intake of Green leafy Vegetables and whole fruits which are rich in fibers are also recommended. Specific Diet has been prescribed for Diabetic and Hypertensive patients whereas for patients with Dyslipidaemia, a Low-fat High fiber diet is suggested. The patients are also asked to drink an adequate amount of water unless they have any related physical ailments.

As an initial part of the exercise recommendation, mild to moderate walking is been advised.

It is recommended to commence walking from the next day of the discharge [6]. Brisk walking is not recommended during initials 2-3 weeks post-surgery instead, normal walking is recommended. On the first week after the surgery, patients are asked to walk for a short period of 5 minutes. Gradually, every week the time is been increased to 5 minutes and by the end of 1 month, the patient should walk 30-45 minutes. Patients are advised to walk on plain areas and recommended to avoid steeper places, hills, etc.

As a preparatory step for Yoga, loosening exercise in form of simple chair exercise is being recommended. After the Loosening exercise, Hands in and out breathing is suggested as a standing breathing exercise.

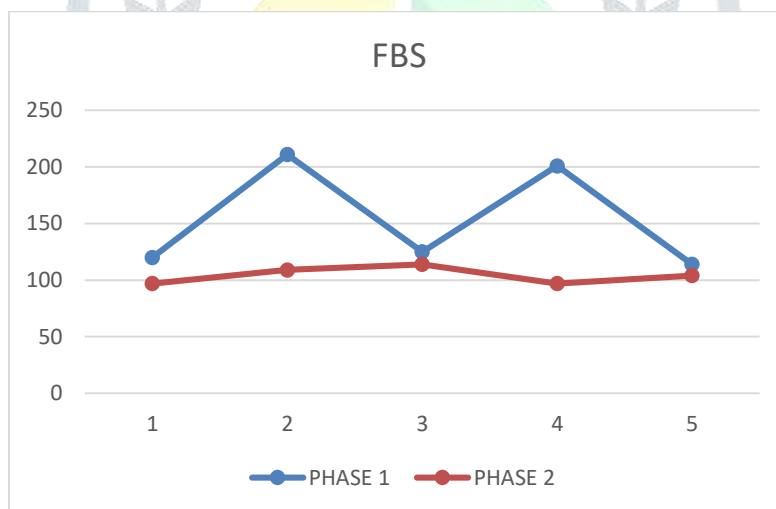
Short Sound-based pranayama practice is also prescribed for effective self-management of Anxiety, stress, and tensions.[7]

The patients were advised to continue the same from the day of discharge till the time of review at 1 month. In the second phase, more active exercises and Yoga protocols are explained and demonstrated. Apart from the preparatory exercises of phase I, standing, sitting, and lying down asanas are recommended in phase II. Prone, Forward bending, and excessive backward stretching asanas are avoided. For patients with hypertension, hand-raising asanas are avoided. Patients are asked to continue these yogic practices throughout.

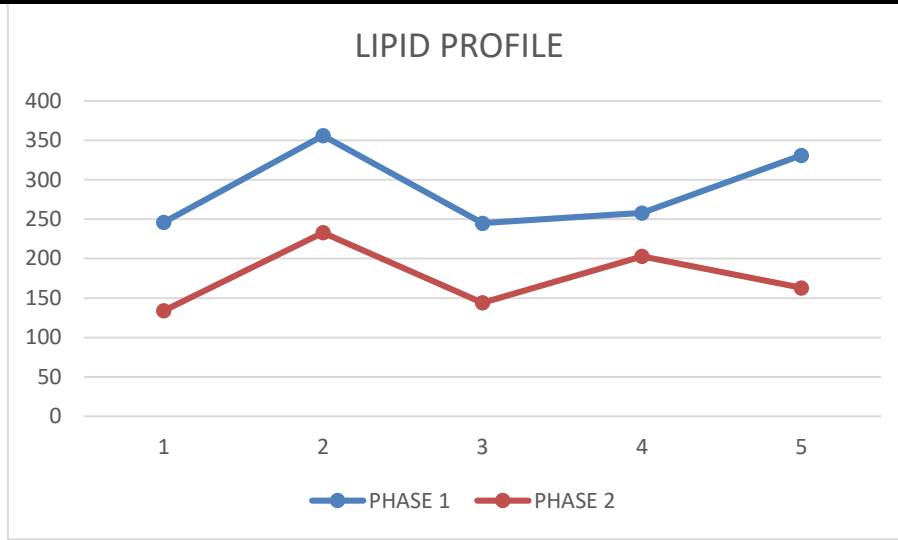
#### IV. RESULTS

It was observed that most of the patients after phase 1 reported positive physical, mental, and spiritual well-being. The benefit extended to the self-reported quality of life (QoL) and physical and biochemical measurements as well. [8] It is noticed that the Blood values like FBS (graph 4.1), Lipid Profile (4.2), etc, and the blood Pressure (Graph 4.3) Seemed to be reduced after 3 months of regular administration of the CR module, as depicted in the graph.

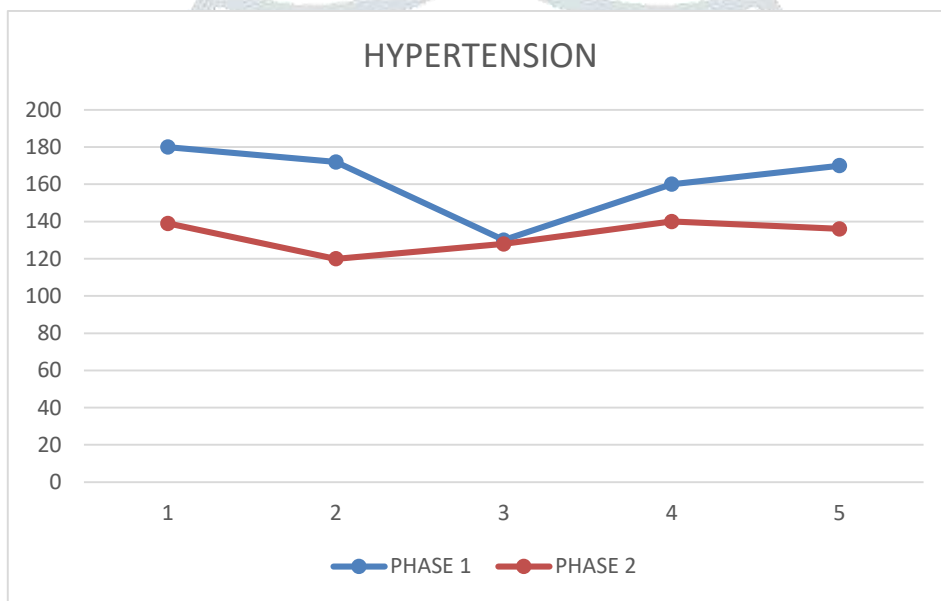
The mental status of the patients was also measured using the Hamilton Anxiety Rating Scale (HAM-A). A score of 17 or less indicates mild anxiety severity. A score from 18 to 24 indicates mild to moderate anxiety severity. Lastly, a score of 25 to 30 indicates a moderate to severe anxiety severity (Graph 4.4). After regular Yoga in the form of Pranayama, breathing exercises, and following the CR module, it has been recorded with Hamilton Anxiety rating Scale that after 3 months, on average, the Anxiety of patients has been reduced. The individual results of the random five patients have been depicted in the graph. (Graph 4.1, Graph 4.2, Graph 4.3)



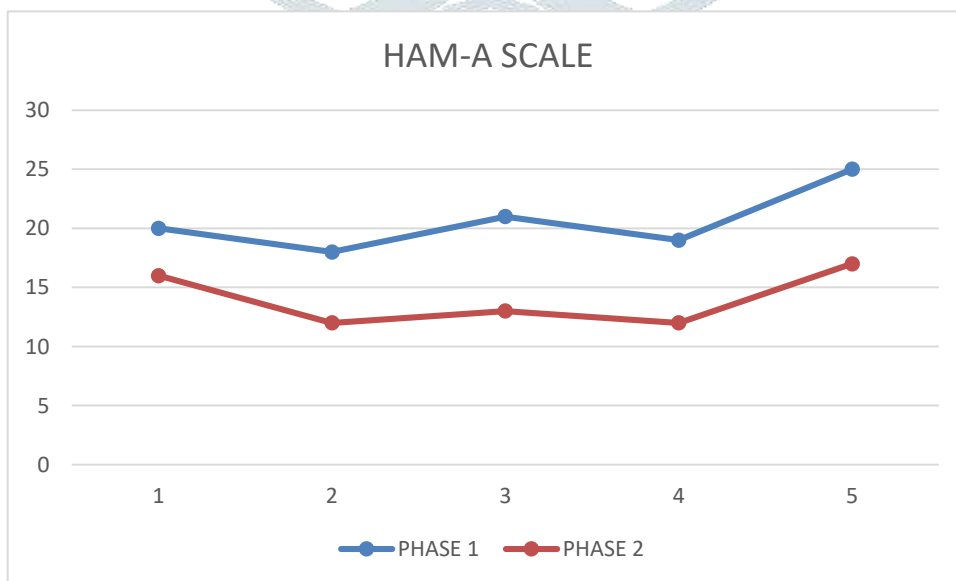
Graph: 4.1



Graph:4.2



Graph:4.3



Graph:4.4

## DISCUSSION

The integrative model of CR was found beneficial in implementing healthy lifestyle practices and improving participants' physical health. The proper adherence to diet, exercise, yoga, and lifestyle modifications had given drastic results in CR patients. The various parameters which were evaluated during Phase 1 and Phase 2 and the periods of Review visits in OP showed improvement in Physical Fitness as well as Mental Stability. Physical fitness was measured using routine blood investigations, day-to-day activities, and other diagnostic procedures. The various investigations showed a drastic improvement in the graphs of Diabetes mellitus, Hypertension, and Dyslipidemia as depicted earlier. All these Rehabilitation measures showed a positive result on the integrative medicine model in the prevention and management of CVDs.

## CONCLUSION

Although percutaneous interventions, bypass surgery, and drugs are effective, re-hospitalization, revascularisation, and recurrence of cardiac events are not uncommon. Alongside the conventional management of acute coronary syndrome, cardiac rehabilitation was found effective in improving the quality of Life (QoL) through Lifestyle modification and management. Hence, this observational study was concluded with an inference that the integrative medicine model comprising, Yoga, Diet along medication have a positive impact on treating patients with acute coronary symptoms.

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