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Case Report

Integrated approach to managing hypertension, diabetes, and reduced GLS: a case study of ayurvedic panchakarma therapies and lifestyle modification

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ABSTRACT

Hypertension, diabetes mellitus, and reduced GLS Score are prevalent cardiovascular conditions posing significant health risks. Conventional treatments often fall short in managing these conditions comprehensively, necessitating exploration of alternative approaches. This case study examines the efficacy of Ayurvedic Panchakarma therapies and lifestyle modifications in managing hypertension, diabetes, and reduced GLS Score. A 62-year-old male with hypertension, diabetes, and hypothyroidism, unresponsive to conventional medications, underwent a 7-month treatment regimen. The intervention included Panchakarma treatments and a gobipi diet box, characterized by low carbohydrates and fats, high protein, and rich potassium, along with a 1000-calorie per day diet. It is showed that the diet led to significant improvements: hypertension was reversed, weight was reduced, and lipid profiles improved. The patient's glucose tolerance test (GTT) turned negative, indicating diabetes reversal. The comprehensive approach also addressed metabolic syndrome components, including dyslipidemia and thyroid dysfunction. Ayurvedic treatments proved effective in managing the patient's cardiovascular conditions. Weight loss and hypertension correction contributed to significant cardiac improvements, including enhanced GLS. Additionally, the normalization of diabetes and thyroid levels, along with improved lipid profiles, underscored the efficacy of integrating Panchakarma therapies with lifestyle modifications for comprehensive cardiovascular health management.

Keywords: Hypertension, Diabetes mellitus, Reduced GLS score, Ayurveda, Panchakarma, Lifestyle modification, Cardiac function, Blood pressure control

INTRODUCTION

Hypertension, diabetes mellitus, and reduced GLS are prevalent cardiovascular disorders associated with significant morbidity and mortality worldwide.[1] Despite advancements in conventional treatment modalities, a substantial proportion of patients remain inadequately managed, necessitating exploration of alternative therapeutic approaches.[2] Ayurvedic Panchakarma therapies, coupled with lifestyle modifications, offer a holistic framework for managing such complex conditions. This case study elucidates the efficacy of such an integrated approach in a patient with hypertension, diabetes mellitus, and reduced GLS.

CASE REPORT

Mr. TR (62 years) complained of Insomnia, chest heaviness, palpitation, Incomplete voidance of urine. The patient had history of hypertension (15 years) and hyperthyroidism (4 years). Patient was told to undergo a 2D Echo with GLS which revealed reduced GLS score. He did not want to undergo any invasive procedures

hence was suggested appropriate diet, panchakarma, diet and Ayurvedic medicine. On presentation to the clinic, the following tests were performed and results noted: ECG (suggestive of left ventricular hypertrophy), 2D echo (type 1 left ventricular diastolic dysfunction, EF=60%), GLS Score, TSH (Thyroid Stimulating Hormone), HBA1c, GTT (glucose tolerance test) and lipid analysis.

Table 1: Summary of natural detoxification procedure.

Steps involved	Product	Mechanism of action	Duration (mins/sitting)	Probable adverse effects
Centripetal oleation	L-Abhyanga oil	Reduces sympathetic overactivity in the body, improves the elasticity of the arteries.	25-30	none
Thermal vasodilation	Dashmoola Kwath	Reduces sodium and water retention in the body, thereby reducing the blood volume, reduces the rigidity in the vessels.	15-20	none
Per rectal herb decoction administration	VDB Basti comprising of Shaliparni, Prshniparni, Erandamoola, Brihati and Tila tailam	Has anti-inflammatory action thus reducing endothelial dysfunction, antihypertensive, hypolipidemic, anxiolytic and antioxidant action.	30	none

The patient underwent 2D echo with GLS to understand the complications of hypertension and thyroid on the Heart. The patients GLS score was low and heart showed left ventricular hypertrophy.

Table 2: Anthropometric measurements pre- and post-diet management.

Parameters	Baseline	Post-treatment
Height (cm)	157	157
Weight (kg)	68.6	62.4
Body mass index (kg/cm^2)	28	25
Abdominal girth (cm)	101	95
Blood pressure (mmHg)	126/85	128/87
Heart rate (per min)	85	78
HBA1c (%)	7.5	5.7

Table 3: Pre and post outcomes of report.

Parameters	Baseline	Post-treatment
EF, %	60	60
GLS, %	-11.6	-15.8
EDV (ml)	67.3	70.6
ESV (ml)	38.5	43.6
Nocturnal BP dipping	-8.94	2.59
TSH	12.55	8.84
HDL (mg/dl)	40.3	43
LDL (mg/dl)	122.2	113

EF-ejection fraction, GLS-global longitudinal strain, EDV-End-diastolic volume, ESV-End-systolic volume, TSH-thyroid stimulating hormone.

The patient was advised GOBIPI diet (calorie calculated 1000 kcal) high in fibers, low in sodium, adequate potassium, and also natural detoxification (Panchakarma) procedure for a period of 7 months and exercise to improve the health of heart as well as the vasculature.

Table 4: GTT outcomes of report.

Parameters	Fasting	1 hr	2 hr	Status
GTT	87.9	124.5	121.3	Negative

GTT-glucose tolerance test

DISCUSSION

The patient was suffering from chest heaviness, palpitation and T2DM. The BMI of the patient was 28 which is categorized as obese. Patients abdominal girth on day 1 was 101 cm (baseline) (obesity:102 cm in men and 88 cm in women) 8 confirming central obesity.

The 2D Echo with GLS Score performed helped in diagnosing the Hypertension complication on Heart as well as reduced blood supply to the myocardium. The Patient was known case of Diabetes, with uncontrolled Blood sugar levels, which are prone to cause Vascular, endothelial dysfunction as stated in research (Endothelial dysfunction in diabetes mellitus).[1]

The GOBIPI diet kit and natural detoxification was initiated, and the patient was monitored for 7 months. During the 7 months the patient lost 7 kgs with BMI and abdominal girth in normal range. Unlike Coronary Angiography, OCT and IVUS, 2D echo with GLS is a non-invasive procedure through which we can elicit the structural abnormalities that has come to the heart due to longstanding hypertension also helps us know how much blood supply the myocardium is receiving. Diet not only eliminated the obesity but also corrected glucose metabolism by reducing the metabolic burden on the body. Post-treatment, the patient's Hb1Ac reduced from

7.5 % to 5.7%. Thus, the patient's diabetes was under control according to American diabetes association (ADA) that recommended HbA1c value ≥6.5% for diagnosis of diabetes.[2] The natural detoxification procedures helped to relieve the patient of HTN (as detailed in table 3) by improving his ABPM (Nocturnal BP Dipping) result from -8.94 to 2.59. These methods have proven aid in reversal of HTN.

The diet management with natural detoxification led to a considerable reduction in dosage of allopathic medication for T2DM, BP and cholesterol, thus improving the quality of life. The recommended treatment Reversed HTN, Diabetes, Obesity, improved ischaemic condition and Thyroid profile also normalized lipid profile.

CONCLUSION

The study demonstrated significant improvements in multiple health parameters over a 7-month period, highlighting the effectiveness of the intervention in managing and reducing cardiovascular and metabolic risks. Notably, the patient experienced substantial weight loss, resulting in a meaningful reduction in BMI and improvements in blood pressure control. Enhanced glycemic control was evidenced by a significant decrease in HbA1c levels, accompanied by stable fasting glucose tolerance test results.

Cardiac function also showed marked improvement, as indicated by the increase in global longitudinal strain, with a stable ejection fraction. Moreover, the improvement in thyroid function and lipid profile further contributed to the overall reduction in cardiovascular risk. These findings underscore the positive impact of comprehensive management strategies on cardiovascular and metabolic health. The results advance our understanding by demonstrating that a multi-faceted approach can lead to significant improvements in clinical outcomes without the need for hospitalization or encountering adverse events. This study adds to the growing body of evidence supporting the role of integrative care in managing chronic conditions and reducing long-term health risks.

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