Case study

Efficacy of Ayurveda based ischemia reversal program in management of patients with ischemic heart disease with history of recent MI: a report of 3 cases.

Abstract

Ischemia Reversal Program (IRP) is a Panchakarma (five internal bio-cleansing therapies) and allied therapeutic combo. There is paucity of data regarding effect of IRP in patients of ischemic heart disease in the form of myocardial infarction. Here three cases of IHD with history of MI are reported who were treated with IRP. 3 patients of 60,60 and 49 year came to Madhavbaug clinic with chief complaints ranging from dyspnea on exertion NYHA grade II, nocturia, pedal edema for 1 month. Case 1 had history of myocardial infarction 1.5 years back, while case 2 had history of cigarette smoking, regular alcohol intake and myocardial infarction 2 months back and was a known case of diabetes mellitus for 20 years. Case 3 was a known case of hypertension. Their stress test revealed inferolateral ischemia at 3 Mets, inferolateral ischemia at 3.4 Mets and inferior ischemia at 4.6 Mets, respectively. Echocardiography revealed changes ranging from diastolic dysfunction, left ventricular wall motion abnormalities to reduced left ventricular ejection fraction. In order to assess the IRP's efficacy in IHD, it was found that it improved VO2max, DBP, and SBP (with strong statistical significance) from the start of the trial to the end of the follow-up period. SBP has been one of the prognostic indicators for IHD patients. SBP reduction is linked to a prognostic factor in IHD because it decreases ventricular afterload and enhances endothelial function. Most notably, we discovered that after 90 days of treatment, IRP significantly reduced patients' reliance on typical allopathic medications. 3 cases of IHD which were successfully treated with IRP therapy were reported in the current research work. IRP reduced systolic and diastolic blood pressure, heart rate which are important prognostic parameters in these patients. The positive effects of IRP therapy were seen in echocardiographic and ECG findings as well.

Keywords: Ayurveda, Myocardial Infarction, Panchkarma, Ischemia Reversal Program.

Introduction: In India, IHD is the leading cause of CVD-related mortality (>80%). This IHD-related death rate is much greater than the global average. IHD is responsible for 1/5th of all fatalities and 1/10th of years of life lost in India, a measure of premature mortality that considers young deaths above elderly deaths.[1]

The therapeutic function of medications used to treat IHD is related to a correction of the disparity between oxygen demand and supply to the heart, normalizing blood pressure (BP) and heart rate (HR) platelet aggregation reduction, hypolipidemic action, antioxidant impact, and so on.[2] Due to the negative effects of traditional medications like headache, dizziness, weakness, hypotension, loss of appetite etc., patients are less likely to take them i.e. adherence to therapy is poor. Increased therapeutic costs are the primary cause of higher morbidity and death in individuals with IHD, as well as increased health-care costs.[3,4] As a result, new therapy options should be investigated in order to successfully address IHD.

Ischemia Reversal Program (IRP) is a Panchakarma (five internal bio-cleansing therapies) and allied therapeutic combo. Snehana or therapeutic oleation, Swedana or sudation therapy and Basti, or therapeutic enema, are the procedures employed in Panchakarma under this curriculum. These treatments are well-known for their ability to detoxify the body.[5] Anxiety, sadness, a diminished sense of personal strength, a worse quality of life, and other symptoms have been linked to IHD in research.[6] There is paucity of data regarding effect of IRP in patients of ischemic heart disease in the form of myocardial infarction. Here three cases of IHD with history of MI are reported who were treated with IRP.

Case Presentation:

Case 1: A 60-year-old female who was a homemaker came to Madhavbaug clinic with chief complaints of dyspnea on exertion NYHA grade II, nocturia, pedal edema for 1 month. Patient had a history of myocardial infarction 1.5 months back, for which she was advised coronary angiography, which she denied due to fear of complications and monetary issues. She was obese and a known case of hypertension for 15 years, hypothyroidism for 4 years, and type 2 diabetes mellitus was detected recently before visiting Madhavbaug clinic. Stress test revealed inferolateral ischemia at 3 Mets while echocardiography had revealed type 2 diastolic dysfunction, left ventricular wall motion abnormalities and reduced left ventricular ejection fraction. A diagnosis of IHD with DM with HTN was made.

Case 2: A 60-year-old male came to Madhavbaug clinic with chief complaints of post prandial left precordial chest pain, dyspnea on exertion for 2 months and recently developed constipation. He was a chain smoker, with regular alcohol intake, and eating restaurant food frequently. Patient had a history of myocardial infarction 2 months back and was a known case of type 2 diabetes mellitus for 20 years, and hypertension for 2 months. Patient had undergone coronary angiography but angioplasty could not be done and the patient denied coronary artery bypass graft. Stress test revealed inferolateral ischemia at 3.4 Mets, while echocardiography revealed type 2 diastolic dysfunction, left ventricular wall motion abnormalities and reduced left ventricular ejection fraction (30%). Based on these findings a diagnosis of IHD with DM with HTN was made.

Case 3: A 49-year-old male came to Madhavbaug clinic with chief complaints of burning chest pain, palpitation and headache for 1 month. He was a businessman who was constantly under stress and disturbed sleep. Patient had a history of myocardial infarction 1 month back for which he was thrombolysed; later coronary angiography was done followed by angioplasty but problems persisted one month post angioplasty. The patient had no history of any major disease. Stress test revealed inferior wall ischemia at 4.6 Mets while echocardiography revealed basal left ventricular and inferior wall hypokinesia. Based on these findings a diagnosis of IHD with HTN was made.

The IRP is a 3-step procedure, which was performed on all 3 cases after a light breakfast. One sitting of the procedure took 65-75 minutes. It is summarized in table 1.

Intervention	**Case 1**	**Case 2**	**Case 3**
Panchkarma	Ischaemia reversal therapy of 21 sessions weekly twice administered over 2.5 months with a gap of 72 hours between 2 therapies. Virechan karma using medicated ghee followed by sansarjan kram.	Ischaemia reversal therapy of 21 sessions weekly twice administered over 2.5 months with a gap of 72 hours between 2 therapies followed by 11 therapies, one per month. Virechan karma using medicated ghee followed by sansarjan kram.	Ischaemia reversal therapy of 21 sessions weekly twice administered over 2.5 months with a gap of 72 hours between 2 therapies. Shirodhara with Jatamansi kwath at every session
Diet	Intermittent fasting 12:12 Moong diet for 15 days Prameh diet box -800 calories for 3 months	Moong diet Reverse diet box -1000 calories for 2 months	Reverse diet box -1000 calories for 2 months
Exercise	Pranayam, Omkar, Sitali, Yogasan, stretching exercise, morning	Pranayam, Omkar, spirometric exercise, therabands, balloon inflationYogasan, stretching exercise, morning walk,	Pranayam, Omkar, Yogasan, stretching exercise, morning walk, suryanamaskar –heart

	walk, strength training –heart rate being monitored pre and post exercise (depending on cst MHR), meditation	strength training –heart rate being monitored pre and post exercise, meditation	rate being monitored pre and post exercise, meditation
Others	Fluid restriction 1.5 litre /day, salt and oil restriction, avoid day sleeping	Fluid restriction 1.5 litre /day, salt and oil restriction, family counselling for habits, Til tail abhyanga daily	Fluid restriction 1.5 litre /day, salt and oil restriction, stress management, Til oil abhyanga at home daily, goghrut nasya

Table 1: Ischemia reversal therapy given to 3 patients in present case report.

Prameha diet kit is a specialized diet kit for type 2 diabetes patients. Prameha diet helps in quick glycemic control, reducing insulin resistance and reducing the BMI. It is based on the concept of 800 kcal/day, low in carbohydrates and moderate in proteins and fats. The Reverse diet kit is a scientifically designed 1000 kcal/day diet box containing pre-portioned food products that fulfill the daily requirement of breakfast, lunch, dinner, soup and early morning diet options (only fresh vegetables are required to be added separately). The diet is anti-inflammatory with a high anti-oxidant capacity, reduces endothelial dysfunction, improves vessel health. Reverse diet kit has high Oxidative Radical Absorption Capacity (ORAC) unit i.e. 64,000 per day. Both diet have carbohydrates 25%, protein 35%, fats 40%.

Changes in various parameters at different time points after giving IRP is shown in table 2.

Parameter	Before treatment			Day 90			Day 180			1 year status			2 year status			3 year status		
	C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3
Symptoms	DOE II, Pedal edema	DOE II,fatigue	DOE grade III	DOE I	DOE grade I	Nil	DOE I	DOE I	Nil	Nil	Nil	Nil	Nil	Noctu ria, fatigue	Nil	Nil	Nil	NA
SBP	132	154	130	126	130	122	120	122	110	110	120	106	108	134	110	110	124	NA
DBP	80	92	84	82	84	80	68	78	70	86	76	70	68	80	76	70	76	NA
HR	96	78	116	74	76	80	58	78	76	68	68	74	74	70	74	68	68	NA
BMI	36.5	25.12	28.26	32.9	22.7	25	29.2	23.5	25	27.8	23.32	24.35	26.2	23.88	24.35	25.1	23.14	NA
TMT (Mets)	3	3.4	4.6	9.48	11.4	13	12.4	12	14	13	13.42	15	13.52	11.2	15	13.48	13	NA
VO2 max	9.1	12.45	13.65	18.2	23.4	23	26.3	24	35	27	27	35.1	28	23	35.1	27.42	26	NA
Angina index	2	2	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	NA
ST deflection (mm)	-1.9	-2.7	-1.8	0	-1.8	0	0	0	0	0	0	0	0	0	0	0	0	NA
2D Echo	type DD, RWMA, concentric LVH, LVEF40%	dilated LV, akinetic anterior, anteroseptal wall, pulmonary HTn, mild AR	hypokinetic inferior wall	1/3rd apex hypokinetic, LVEF 45%	NA	NA	LVEF60 %	Grade 1 DD, RWMA	Grade diastolic dysfunctio	LVEF 65%	Grade 1 DD, RWMA, LVEF 45%	Normal, LVEF 60%	LVEF 60%	WNL	Normal, LVEF 60%		LVEF 62%	NA
NT pro-BNP	NA	3533	NA	NA	NA	NA	NA	NA	NA	NA	233	NA	NA	180	NA	NA	NA	NA
Sr. TSH	6.2	NA	3.2	3.5	NA	2.4	2.42	NA	2.6	1.73	NA	1.6	1.47	NA	1.26	2.42	NA	NA
HbA1c	NA	8.8	5.7	NA	6.2	5.7	NA	6.4	5.4	NA	6.33	5.5	NA	6.7	5.9	NA	6.2	NA
No. of allopathic medications	8	8	3	5	7	3	4	6	2	2	3	2	1	2	1	1	3	NA

Table 2: Improvement in various parameters after Ischemia Reversal Program (IRP) in 3 cases of present report.

Where: C1,2,3- cases 1,2,3; SBP-systolic blood pressure, DBP-diastolic blood pressure, HR-heart rate, BMI- body mass index, TMT-treadmill test.

Treatment were well tolerated in all the three cases without any adverse effects even after stopping/tapering modern medications. Modern medications were tapered on the basis of improvements in vital, clinical and laboratory parameters related to particular drugs.

Discussion: In the treatment of IHD, Ayurveda (science of life) is a powerful and feasible alternative to current medicine. Ayurvedic practitioners use panchakarma as an adjunct therapy for the treatment of IHD.[7] IRP is a three-step process that includes Snehana,Swedan and Basti. IRP's possible mechanism of action is Snehana, Shirodhara-anxiolytic, which lowers sympathetic overactivity thus reducing anxiety and heart rate and hence the workload of heart. Swedana lowers salt and fluid levels, lowering resting preload and potentially lowering myocardial oxygen demand. Nitric oxide liberation from endothelium can be aided by a decoction of Tribulus terristris, curcumin, and Phyllanthrus embelica administered through Basti. It may also have anti-inflammatory and antioxidant properties. By inducing coronary vasodilation, this activity may aid in improving coronary circulation.[8]

According to contemporary theory, the inflammation of the intestinal mucosa causes hyperemia and exudation, resulting in enhanced flow of protein-rich fluids via vessel walls to the intestinal lumen during the Virechana process resulting in a decrease in fluid volume. It is known to reduce

secretion of catecholamines as well. As a result, it keeps the excessive blood pressure under control.[9]

In order to assess the IRP's efficacy in IHD, it was discovered that it improved VO2max, DBP, and SBP (with strong statistical significance) from the start of the trial to the end of the follow-up period. SBP has been one of the prognostic indicators for IHD patients. SBP reduction is linked to a prognostic factor in IHD because it decreases ventricular afterload and enhances endothelial function.[10] Most notably, we discovered that after 90 days of treatment, IRP significantly reduced patients' reliance on typical allopathic medications.

Calorie restricted diet in all the 3 cases resulted in reduction in body mass index in all the cases. In addition, these diets have rich quantities of antioxidants with favorable ORAC values. Intermittent fasting is known to improve insulin sensitivity, lower blood pressure, reduce oxidative stress, improve immune health and promote cardiac health.[11] These factors might help to reduce the ill effects of IHD to some extent. Moreover, there was drastic reduction in number of allopathic medications throughout study period which might help to improve patient compliance as well due to reduction in number of tablets, possible adverse effects and cost of therapy.

Conclusion: We reported 3 cases of IHD which were successfully treated with IRP therapy. IRP reduced systolic and diastolic blood pressure, heart rate which are important prognostic parameters in these patients. The positive effects of IRP therapy were seen in echocardiographic and ECG findings as well.

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Consent: Written informed consent was taken form the patient regarding use of treatment outcome data for publication.

NOTE:

The study highlights the efficacy of "AYURVEDA" which is an ancient tradition, used in some parts of India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized partially if found suitable.

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