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Research Article

A COMPARATIVE CLINICAL STUDY ON THE ROLE OF *MUSTAK VACA HARIDRA KASHAYA* AND *PATHYA CHURNA* AS *NITYA VIRECAK* IN THE MANAGEMENT OF *MEDA DUSTI* W.S.R TO DYSLIPIDEMIA

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ABSTRACT

In today's fast-paced world dyslipidemia is a major lifestyle disorder, however there is no such phrase dyslipidemia in Ayurvedic texts but it can be clinically correlated with *Meda dusti*. *Meda dhatu* takes the initiative in this *Dhatu pradosaja vikar* which involves vitiation of *Kapha Dosa* along with *Meda dhatu*, and accumulation of *Ama*. **Objectives** To normalize serum lipid value using the trial drug *Mustak Vaca Haridra Kashaya* itself and the same introduced with *Pathya Churna* as *Nitya virecak* in the management of *Meda dusti* (dyslipidemia) comparatively and to find the effectiveness between both treatment protocols under coverage of prescribed *Pathya* and *Apathya*. **Methods** An open labelled comparative randomized controlled clinical trial was done among 60 patients subjected to be suffering from *Meda Dusti* (dyslipidemia) or a known case of it, visiting the OPD of I.P.G.A.E & R at SVSP, Kolkata. The patients were divided into two groups. Group A received *Mustak Vaca Haridra Kashaya* and Group B received *Mustak Vaca Haridra Kashaya* with *Pathya Churna* as *Nitya virecak* for a duration of 45 days. Assessment was carried out using serum lipid profile and subjective parameters, BMI and safety laboratory investigations. **Results** Both the groups showed statistically significant results. The combined drug used in this trial i.e., *Mustak Vaca Haridra Kashaya* introduced with *Pathya churna* as *nitya virecak* has pronounced effect than *Mustak Vaca Haridra Kashaya* alone itself over *Meda dusti* (dyslipidemia). No systemic adverse effect was found during the entire clinical trial.

INTRODUCTION

The evolution of modern human civilization has fostered remarkable technological and agricultural advancements, yet it has simultaneously introduced sedentary lifestyle habits that disrupt physiological harmony. This imbalance has driven a global surge in non-communicable diseases (NCDs), among which dyslipidemia stands out as a critical, asymptomatic health hazard. Characterized by elevated total cholesterol (TC), low-density lipoprotein (LDL), and triglycerides (TG), alongside decreased high-density lipoprotein (HDL), dyslipidemia acts as a silent killer and a primary causative factor for Ischemic heart disease (IHD), coronary heart disease (CHD), myocardial infarction (MI), and cerebrovascular accidents (CVA). In India, the prevalence,[1] of high cholesterol is currently estimated at 25–30% in urban populations and 15–20% in rural subjects while suspected familial hypercholesterolemia varies from 1:125 to 1:450 in urban areas. Without targeted interventions, India is projected to become a major hub for cardiovascular diseases in the near future. While conventional lipid-lowering therapies like statins are widely used, their long-term administration is frequently limited by adverse effects[2], including statin-associated muscle symptoms (SAMS), rhabdomyolysis, and hepatic toxicities. Consequently, identifying safe, effective, and sustainable alternative therapies from traditional systems of medicine is a pressing clinical necessity.

From an Ayurvedic perspective, dyslipidemia corresponds closely with *Meda Dushti*, a reversible precursor stage of *Meda Roga* (metabolic disorders)

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classified as a *Santarpanjanya Vyadhi*[3] (disease of over-nutrition). The condition arises from an impairment of *Dhatwagni* (tissue metabolism) driven by interconnected dietary (*Aharatmak*), lifestyle (*Viharatamak*), behavioural (*Manasik*), and genetic (*Beej bhava*) factors, heavily influenced by *Kapha Dosha* and *Ama* (toxic metabolic byproducts). Pathophysiological elevated serum lipids share functional equivalence with *Sneha*, *Sama Rasa*, and *Meda Dhatu*. Ayurvedic classics differentiate *Meda* into *Baddha meda* (fixed depot fat) and *Abaddha meda*[4] (circulating lipids, including TC, TG, LDL, HDL, and VLDL). Furthermore, lipid derivatives correlate with structural variants such as *Vasa* (intramuscular fat), *Majja* (large bone marrow), and *Sarakta Meda* (small bone marrow). Ayurvedic therapeutics aim to correct central metabolism (*Agni*) and eliminate excess *Meda*, mirroring the dual approach of lipid-lowering drugs and lifestyle modifications in contemporary medicine. To validate these ancient principles through a rigorous scientific lens, the present clinical trial was designed to evaluate the clinical efficacy and safety of *Mustak Vaca Haridra Kashaya* and *Mustak Vaca Haridra Kashaya with Pathya Churna* as *Nitya virecak*. By bridging traditional Ayurvedic wisdom with contemporary biomedical metrics, this study seeks to establish an integrative, sustainable management strategy for dyslipidemia and its associated metabolic complications.

AIM AND OBJECTIVES

Aim

To find out clinically, the effectiveness of *Samana ausadhi* i.e., *Mustak Vaca Haridra Kashaya* itself and the same with *Pathya churna* as *Nitya virecak* in the management of *Meda dusti* (dyslipidemia). Comparative study of the effectiveness between both the treatment protocols, under coverage of prescribed *Pathya* and *Apathya* and to encourage future workers in this field for better evaluation and proper implementation of such safe and effective ayurveda treatment protocols toward the problem of *Meda dusti* (dyslipidemia).

Objectives

Primary Objective

To normalise serum lipid value using the trial drug *Mustak Vaca Haridra Kashaya* itself and the same introduced with *Pathya churna* as *Nitya virecak* in the management of *Meda dusti* (dyslipidemia) comparatively and to find the effectiveness between both treatment protocols under coverage of prescribed *Pathya* and *Apathya* as well as to assess the Body Mass Index (BMI).

Secondary Objective

Improvement of symptoms like *Javoparodha, Daurbalya, Daurgandhya, Swedabadha*, *Kshudha atimatra, Pipasa atiyoga, Kricchavyavaya* and to find out a safe effective and easily available management against *Meda dusti*.

MATERIAL AND METHODS

Study Design

The present study was randomised, comparative, interventional clinical trial conducted in the Outpatient and Inpatient department of Kayachikitsa at I.P.G.A.E & R at SVSP, Kolkata, West Bengal.

Selection of Patients

Patients were randomly selected from OPD & IPD. A special case proforma was designed and duly filled with all the information of history taking, physical examination and investigations. After the confirmation, Informed consent Form (ICF) was taken from each patient prior enrolment to the study. They were further divided into two groups Group A and Group B following simple randomised plan.

Diagnostic criteria

Diagnosis was made on the basis of deranged serum lipid profile as per NCEP ATP III Guidelines.[5]

- Total Cholesterol >200mg/dl
- Triglycerides>150mg/dl
- LDL >130mg/dl
- VLDL >30mg/dl
- HDL <40mg/dl.

Inclusion Criteria

- Both male and female patients will be randomly selected without any bias of social, educational. religious and economic status.
- Age- 20 to 65 years
- Person suffering from dyslipidaemia and its related disorders.
- Total cholesterol (TC)-(200-350)mg/dl. triglycerides (TG)-(150-500)mg/dl
- Low-density Lipoprotein (LDL)-(≥130)mg/dl
- Pre diabetic individuals: FBS (100-125mg/dl)
- PPBS (140-199 mg/dl)
- Patient suffering from dyspnea on exertion, weight gain, obesity, and normal asymptomatic people were screened for dyslipidaemia.
- Patients who agreed to follow the study protocol and give consent for clinical trial.

Exclusion Criteria

- Patient below 20 yrs, and above 65 yrs.
- Patients suffering from DM, pancreatitis, Uncontrolled hypertension.
- Malignant disorders, genetic disorders, renal disorders.
- Pregnancy
- Patients with corticosteroids abuse.
- Patients under any hormonal replacement therapy.

- Patients who have the history of either cardiac or cerebral stroke and also who went by-pass surgery.
- Patients who are not willing to come under trial or give consent**.**

Assessment Criteria

Clinical assessment was carried out using subjective and objective parameters. A special case proforma was designed and duly filled with all Ayurvedic and Modern scientific parameters.

Subjective Parameters[6]- *Javoparodha* (lack of enthusiasm), *Kricchavyavaya* (difficulty in sexual activity), *Daurbalya* (debility), *Daurgandhya* (foul smell from body)**,** *Swedabadha* (distressful sweating) *Kshudhatimatra* (excessive hunger) and *Pipasatiyoga* (excessive thirst) along with Body Mass Index (BMI) = weight (kg) /height (m)$^{2.}$

No.	Subjective Criteria	Findings	Arbitrary Scoring	Before Treatment	After 15 days	After 30 days	After 45 days
1.	*Javoparodha*	Absent	1				
		Mild ↑	2				
		Moderate ↑	3				
		Severe ↑	4				
2.	*Daurbalya*	Absent	1				
		Mild ↑	2				
		Moderate↑	3				
		Severe ↑	4				
3.	*Daurgandhya*	Absent	1				
		Mild ↑	2				
		Moderate ↑	3				
		Severe ↑	4				
4.	*Swedabadha*	Absent	1				
		Mild ↑	2				
		Moderate ↑	3				
		Severe ↑	4				
5.	*Kshudha Atimatra*	Normal Appetite	1				
		Mild >3 meals <4 meals	2				
		Moderate	3				
		Mild + Snacking ↑					
		Severe >4 meals + Snacking ↑	4				
6.	*Pipasa Atiyoga*	Normal Intake	1				
		Mild >3 lit ↑	2				
		Moderate >5 lit ↑	3				
		Always Thirsty ↑	4				
7.	*Kriccha Vyavaya*	Absent	1				
		Mild ↑	2				
		Moderate ↑	3				
		Severe ↑	4				

Objective parameters- Serum Lipid Profile as per NCEP ATP III Guidelines

Serum lipoprotein	Fasting values (mg/dl)	Interpretation
Total cholesterol	<200	Desirable
	200-239	Borderline high
	>240	High
LDL cholesterol	<100	Optimal
	100-129	Near optimal
	130-159	Borderline high
	160-189	High
	>190	Very high
HDL cholesterol	<40	Low
	>60	High
Triglyceride	<150	Desirable
	150-199	Borderline high
	200-499	High
	>500	Very high

Investigations: Hb%, FBS & PPBS, Urea, Creatinine, TSH, LFT (SGOT, SGPT). Lipid profile which includes total cholesterol (TC), low density lipoprotein (LDL) high density lipoprotein (HDL) very low-density lipoprotein (VLDL) and triglycerides (TG).

Withdrawal Criteria

Patients were withdrawn from the study if the patient showed unwillingness to continue the study further or any serious illness developed during the trial phase.

Ethical clearance and Trial Registration- Ethical Clearence was obtained from Institutional Ethical Committee (IEC) [IEC-SVP/3762/2023] dated 03/10/23, and was registered with the Clinical Trial Registry of India having Reg No. CTRI/2024/08/072914 before the onset of the clinical study.

Pathya* and *Apathya [7]

Table 1: *Pathya* (wholesome regimen) *Ahara* (diet) and *Vihara* (lifestyle)

Ahara	*Vihara*
Purana Sali Dhanya, Mudga, Kulattha, Yava, Kodrava, Koradusa, Syamaka, Priyangu, Canaka, Masura, Madhu, Laja, Takra, Sarsapa Taila, Ela, Ruksha dravya, Patrottha saka, Pratapata nira, Katu-tikta-kasaya dravyas, Usna jala	*Cinta, Shrama, Ratrijagaran, Vyavaya, Udvartan, Langhana, Atapsevan, Apatarpan, Bhraman, Prachardana, Virecan, Aguru lepan*

Table 2: *Apathya* (Unwholesome Regimen) *Ahara* (diet) and *Vihara* (lifestyle)

Ahara	*Vihara*
Rasayana ausadhi, Navina Sali Dhanya, Godhuma, Masa, attributes of *Dugdha, Madhura dravyas, Matsya, Mamsa,* intake of excess water after food	*Sitala jala snan, Divasayan, Puspadharan, Sukkah sayya, Vaman karma*

Table 3: List of trial drugs used in this clinical study

Sanskrit name	Botanical Name	Parts Used
Mustak [8]	*Cyperus rotundus* Linn.	Rhizome
Vaca [9]	*Acorus calamus* Linn.	Rhizome
Haridra[10]	*Curcuma longa* Linn.	Rhizome
Pathya[11]	Terminalia Chebula Retz.	Fruit

Table 4: Interventional Trial Drugs

Group Name	**Group A**	**Group B**
Sample size	30	30
Drug	*Mustak Vacha Haridra Kashaya*	*Mustak Vacha Haridra Kashaya* introduced with *Pathya Churna*
Dose	15ml twice daily empty stomach at morning and evening with equal quantity lukewarm water.	15ml twice daily empty stomach at morning and evening with equal quantity lukewarm water introduced along with *Pathya Churna* 5gm as *Nitya virecak* at bed time.

Method of Drug Preparation Used in the Clinical Trial[12,13]- Raw materials of research formulation were properly identified and collected by the institutional expert committee. *Musta, Vaca, Haridra* were taken in a ratio of 1:1:1 respectively. Medicines were prepared at the apothecary department of the institute by conventional methods. The prepared *Mustak Vaca Haridra Kashaya* was packed in 450ml of glass bottle and 75gm *Pathya churna* packed in air tight packet respectively which were randomly allotted to the trial groups as per protocol.



Fig 1: Constituents of the Clinical trial drug obtained from Apothecary department of I.P.G.A. E & R at S.V.S.P.



Fig 2: Preparation of *Mustak Vaca Haridra Kashaya* at Apothecary department of I.P.G.A.E & R at S.V.S.P.



Fig 3: Packed 450ml of *Mustak Vaca Haridra Kashaya*



Fig 4: Packed 75gm of *Pathya Churna*

Duration of Treatment- 45 days

Follow Up- At 15 days interval investigations were performed only before and after completion of study.

Table 5: Status of total number of patients registered in the study

	Group A	**Group B**
Registered	35	33
Completed	30	30
Discontinued total patient	5	3

Randomisation- Eligible patients were assigned to either group in 1:1 ratio using lottery method of simple randomisation. A list of random numbers was generated by picking up the chits mixed in a box. The chits were same in shape, size and color to minimise bias.

Randomisation-Allocation, Concealment mechanism, and Implementation- The sequentially numbered, Opaque, Sealed envelope (SNOSE) technique was used for allocation concealment. Principal investigator generated the allocation sequence, enrolled participants and assigned participants to interventions.

Statistical Methods [14] - Statistical analysis was done using Statistical Package for Social Sciences (SPSS) Software version. Demographic data were expressed as percentages, Quantitative variables were analysed using mean, standard deviation (SD) and standard error (SE) Parametric tests like Paired t test within the group comparison and unpaired t test for intergroup comparisons of objective and subjective parameters. Results were interpreted as: $p < 0.001$- Highly significant; $p<0.05$- Significant; $p>0.05$-Insignificant

OBSERVATIONS

Table 6: Effect of Trial Drugs on Subjective Parameter of Group A

S.No	Parameter	Mean score (BT)	Mean score (AT)	MD	SD	SE	t value	P value	% of Relief
1.	*Javoparodha*	2.7333	1.8667	0.8666	0.681	0.1244	6.966	<0.001	31.70%
2.	*Kricchavyavaya*	1.4000	1.2333	0.1667	0.379	0.692	2.408	0.023	11.90%
3	*Daurbalya*	3.00	1.83	1.17	0.65	0.12	9.87	<0.001	38.89%
4	*Daurgandhya*	2.833	1.633	1.200	0.551	0.1006	11.93	<0.001	42.36%
5	*Swedabadha*	2.667	1.467	1.200	0.482	0.884	13.57	<0.001	44.95%
6	*Kshudhatimatrata*	2.667	1.500	1.167	0.647	0.118	9.866	<0.001	43.75%
7	*Pipasatiyoga*	2.700	1.567	1.13	0.507	0.926	12.34	<0.001	41.97%
8	BMI	26.410	24.02	2.39	1.641	0.299	7.980	<0.001	9.05%

Table 7: Effect of Trial Drugs on Objective Parameter of Group A

S.No	Parameter	Mean score (BT)	Mean score (AT)	MD	SD	SE	t value	P value	% of Relief
1.	Total cholesterol	235.33	195.63	39.7	19.49	3.56	11.158	<0.001	16.87%
2.	Triglycerides	229.70	154.80	74.90	54.58	9.96	7.516	<0.001	32.61%
3	LDL	144.27	102.53	41.73	33.03	6.03	6.93	<0.001	28.93%
4	VLDL	44.93	31.03	13.90	10.09	1.84	17.67	<0.001	30.93%
5	HDL	47.27	53.10	5.834	4.09	0.747	7.803	<0.001	12.34%

Table 8: Effect of Trial Drugs on Subjective Parameter of Group B

S.No	Parameter	Mean score (BT)	Mean score (AT)	MD	SD	SE	t value	P value
1.	*Javoparodha*	2.40	1.70	0.70	0.535	0.978	7.167	<0.001
2.	*Kricchavyavaya*	1.2667	1.1333	0.133	0.346	0.631	2.112	0.043
3	*Daurbalya*	2.367	1.6333	0.733	0.583	0.106	6.886	<0.001
4	*Daurgandhya*	2.433	1.567	0.866	0.507	0.926	9.355	<0.001
5	*Swedabadha*	2.467	1.467	1.00	0.643	0.117	8.515	<0.001
6	*Kshudhatimatrata*	2.667	1.700	0.967	0.615	0.112	8.610	<0.001
7	*Pipasatiyoga*	2.433	1.533	0.900	0.607	0.111	8.115	<0.001
8	BMI	26.537	24.09	2.446	0.781	0.143	17.156	<0.001

Table 9: Effect of Trial Drugs on Objective Parameter of Group B

S.No	Parameter	Mean score (BT)	Mean score (AT)	MD	SD	SE	t value	P value	% of Relief
1.	Total Cholesterol	232.033	184.567	47.4667	24.82	4.53	10.475	<0.001	20.46%
2.	Triglycerides	196.267	137.53	58.73	40.28	7.35	7.98	<0.001	29.93%
3	LDL	144.033	97.00	44.03	23.61	4.31	10.21	<0.001	31.22%
4	VLDL	38.93	26.60	12.33	8.17	1.49	8.26	<0.001	31.68
5	HDL	48.30	53.27	4.97	2.25	0.41	12.08	<0.001	10.28%

Table 10: Overall Effect of Treatment

Overall Effect	Group A (30 patients)		Group B (30 patients)		Total (60 patients)	
	No. of Patients	Percentage of patients	No. of Patients	Percentage of patients	No. of Patients	Percentage of patients
Complete remission (100% relief)	0	0	0	0	0	0
Marked improvement (<100% - ≥75% Relief)	0	0	0	0	0	0
Moderate improvement (<75% - ≥ 50% Relief)	13	43.33 %	19	63.33 %	32	53.33 %
Mild improvement (<50% - ≥25% Relief)	17	56.67 %	11	36.66 %	28	46.66 %
Insignificant improvement (<25% Relief)	0	0	0	0	0	0

RESULT

Effect of clinical interventions revealed reduction in total cholesterol (16.87%), triglycerides (32.61%), LDL (28.93%) and VLDL (30.93%), and increase in HDL i.e., 12.34% of Group A, similarly, Group B achieved reductions of 20.46%, 29.93%, 31.22% and 31.68% and increase in HDL 10.28% respectively. Both groups showed highly significant clinical improvements ($p<0.001$) across all lipid parameters. In case of subjective parameters, both groups showed highly significant results ($p<0.001$) for all parameters except *Kricchavyavaya*, which showed significance at $p=0.023$ (Group A) and $p=0.043$ (Group B). Overall effect of treatment signifies, out of 60 patients, 53.33% showed moderate improvement and 46.66% showed mild improvement, with no cases of complete remission or insignificant response. The combination of *Mustak Vaca Haridra Kashaya* with *Pathya churna* as *Nitya Virecak* demonstrated better overall therapeutic efficacy compared to *Mustak Vaca Haridra Kashaya* alone. No systemic adverse effects were observed during the trial, indicating that the treatment is safe, effective, and suitable for long-term management of *Meda Dushti* (dyslipidemia).

DISCUSSION

On interpretation of results, statistical analysis demonstrated that both treatment protocols significantly reduced total cholesterol (TC), triglycerides (TG), low-density lipoprotein (LDL), and very-low-density lipoprotein (VLDL), while concurrently improvement in high-density lipoprotein (HDL). These findings indicate that both interventions were highly effective across all subjective and objective parameters, demonstrating particular efficacy in reducing elevated TG levels. Overall, the combined drug used in this trial i.e., *Mustak Vaca Haridra Kashaya* introduced with *Pathya churna* as *nitya virecak* has pronounced effect than *Mustak Vaca Haridra Kashaya* alone itself over *Meda dusti* (dyslipidemia). All the three drugs (*Mustak Vaca Haridra*) have potent anti-inflammatory, antioxidant properties. Therefore, it prevents cell damage, strengthen the connective tissue, protects lipid oxidation and stabilizes free radicals. So, the main subjective parameters like *Javaparodha Kricchavyavaya, Daurbalya, Daurgandhya, Swedabadha, Kshudhatimatra and Pipasatiyoga* produced significant results of the trial drugs in this clinical study. The drugs used here have free radical scavenging property. *Musta, Vaca, Haridra* they all belong to '*Lekhaneeya Mahakashya*'[15]. *Mustak*[16] having *Tikta, Katu, Kashaya rasa, Laghu, Ruksha guna* and *Kapha-pittahara* in action. *Vaca* [17] and *Haridra*[18] both are having *Laghu guna, Usna virya* and *Katu vipaka* thus *Kapha vata shamaka* thus, reduces

aggravated *Meda* by its *Lekhana, Karshan, Soshana* and *Kaphanashak* properties. Its *Kaphanashak* properties are due to predominance of *Agni, Vayu* and *Akasha mahabhut* in them which is opposite to that of *Meda dhatu (Prithvi* and *Apa mahabhut*)[19], maintaining *Dosa-dhatu* equilibrium. Not only it reduces excessive *Meda dhatu* (progressive and sustained reduction of *Sthayee meda*) but also promotes weight loss by targeting excess fat in the body and improves body metabolism. *Pathya*[20] *(Haritaki*) predominantly *Kashaya rasa, Vatanulonama* and *Tridosahara*. It removes excessive *Kleda, Meda* and *Ama* (toxins) i.e., the obstruction in channels of circulation (*Srotas*) thus it clears the circulation, proper evacuation of *Mala* (waste products) and corrects the metabolism, relieving from aforesaid sign and symptoms. Thus, an overall assessment makes the drug more prominent in acting against *Kapha* and *Vata dosa*. All drugs used in clinical trial enhances *Jatharagni* and *Dhatwagni* therefore improves cellular metabolism, reduces *Ama* formation resulting in diminished *Abaddha meda dhatu* production in the body. From various research article it has been proved that all the drug used in this clinical trial have anti-hyper lipidemic activity. Hence it improves fat metabolism.

Mustak has anti-obesity property as it contains phytochemicals like alpha cyperone that acts as agonist by activation of β3 AR adrenoreceptor [21] which stimulates lipolysis, and regulates body weight. *Vaca* improves metabolic activity by several signalling pathways and oxidative mechanism which mitigates oxidative stress and other indirect mechanism to improve various metabolic disorders. B-asarone[22] compound in it showed weight loss. It also inhibits metabolic transformations, elevated cholesterol and adipokine variance. It has antihypertensive, anti-inflammatory, cardioprotective and immune-modulatory effects. The invitro study showed lipid lowering activity through inhibition of the pancreatic lipase percentage (28.73%) *Haridra* plays a significant role in reduction of serum triglycerides level and potentially increases HDL levels in blood. Curcumin stimulates enzyme cholesterol 7 alpha hydroxylase[23] which involves in the synthesis of bile acids. Bile acids help to eliminate cholesterol from the body and helps overall lipid balance. It also has antioxidant properties, protects cholesterol from oxidation therefore it helps in managing a healthy lipid profile. It also reduces the expression of inflammatory markers like TNF -alpha and IL-6 which are elevated in metabolic disorders. *Pathya churna* due to its *Anuloman* property doesn't let the bad cholesterol i.e., LDL to propagate in the body and promotes the production of good cholesterol i.e., HDL in the body. It also contains several active ingredients like saponins, phytosterols, chebulinic acid[24] which helps to lower total cholesterol, triglycerides and also increases the level of HDL cholesterol levels. All drugs mentioned have potent antioxidant, anti-inflammatory property thereby it prevents atherosclerotic plaque formation, repair blood epithelial cells. In conclusion all drugs play a significant role in fat metabolism by influencing lipid levels, reducing fat accumulation and promoting weight management.

So, in a nutshell we declare that the trial drugs used in this study have significant impact over *Meda dusti* (dyslipidemia) in both groups, the combined drug used in this trial i.e., *Mustak Vaca Haridra Kashaya* introduced with *Pathya churna* as *Nitya virecak* has pronounced effect *than Mustak Vaca Haridra Kashaya* alone itself over *Meda dusti* (dyslipidemia).

CONCLUSION

This clinical study demonstrates that both evaluated Ayurvedic interventions significantly improve lipid profiles and anthropometric parameters in *Meda Dushti* (dyslipidemia). Notably, combining *Musta Vaca Haridra Kashaya* with *Pathya Churna* as a *Nitya Virecak* yielded superior therapeutic efficacy compared to the alternate protocol. Both regimens exhibited robust safety profiles, with zero adverse drug reactions and stable post-treatment haematological, hepatic, and renal biomarkers. Mechanistically, these formulations disrupt pathogenesis by multi-level targeting of *Dosha*, *Dhatu*, *Agni*, and *Srotas*. These outcomes validate the foundational Ayurvedic principle that restoring metabolism (*Agni*), clearing micro-channel obstruction (*Srotorodha*), and normalizing lipid pathways are vital for successful management**.** Further large-scale trials are encouraged to firmly establish these integrations within modern metabolic healthcare.

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