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THE EFFECTIVENESS OF HOMOEOPATHIC PLANT EXTRACT SOLUTION OF CRATEGUS OXYCANTHA AS AN ADD-ON THERAPEUTIC IN CASES OF DYSLIPIDEMIA: AN OPEN LABEL RANDOMISED TRIAL

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ABSTRACT

Dyslipidemia is a major modifiable risk factor for cardiovascular diseases (CVDs), necessitating the exploration of alternative therapeutic strategies. *Crataegus oxycantha* (hawthorn) has been traditionally utilized for its cardiovascular benefits, including lipid-lowering and antioxidative properties. This study aimed to evaluate the effectiveness of *Crataegus oxycantha* as an add-on homeopathic therapy in improving lipid profiles in dyslipidemic patients when combined with constitutional homeopathic treatment and reviewing literature.

A randomized open-label clinical trial was conducted over 12 months at two homeopathic hospitals in Jaipur, enrolling 98 participants. Patients were randomly divided into two groups:

- Control Group: Received only constitutional homeopathic treatment.
- Intervention Group (Control + *Crataegus oxycantha*): Received constitutional treatment along with *Crataegus oxycantha* extract.

Lipid profile parameters, including triglycerides (TG), LDL-C, HDL-C, non-HDL-C, and the ApoB/ApoA1 ratio, were assessed at baseline and post-treatment. Results indicated no significant changes in the control group, while the treatment group exhibited statistically significant improvements across all measured lipid parameters. These findings suggest that *Crataegus oxycantha* may serve as a potential add-on therapy in managing dyslipidemia, warranting further placebo-controlled trials to confirm efficacy and mechanisms of action.

KEYWORDS: Dyslipidemia, Cardiac Risk Marker, Homeopathic Medicine, *Crataegus oxycantha*

INTRODUCTION

Dyslipidemia is a broad term encompassing various abnormalities in lipid metabolism, including elevated low-density lipoprotein cholesterol (LDL-C), triglycerides (TG), and reduced high-density lipoprotein cholesterol (HDL-C). It is a significant contributor to atherosclerotic cardiovascular diseases (ASCVD) and remains a

global health concern (1,2). Despite the widespread use of statins, residual cardiovascular risk persists, necessitating adjunctive or alternative therapeutic strategies (3).

Crataegus oxycantha (hawthorn) has been historically recognized in traditional medicine for its cardioprotective effects, including antioxidant activity, endothelial protection, and potential lipid-lowering properties (4,5). This study aimed to investigate the add-on effects of *Crataegus oxycantha* in dyslipidemic patients receiving constitutional homeopathic treatment.

METHODS

Study Design and Setting

This randomized open-label clinical trial was conducted at Dr. Girendra Pal and Dr. M.P.K. Homoeopathic Hospitals, Jaipur, India, over 12 months. Follow-ups were conducted every 15 days to 1 month, and lipid profile assessments were performed at baseline and every 3 months.

Participants

Inclusion Criteria:

- Adults ≥25 years, of both genders, diagnosed with dyslipidemia.
- Individuals with obesity and consenting to follow-ups.

Exclusion Criteria:

- Patients with active coronary artery disease.
- Those on lipid-lowering pharmacological treatments.

Intervention

Participants were randomly assigned to:

1. Control Group: Received constitutional homeopathic treatment alone.
2. Control + *Crataegus oxycantha* Group: Received constitutional treatment + *Crataegus oxycantha* extract.

The dosage and repetition followed the Hahnemannian guidelines (5th & 6th editions).

Outcome Measures

The primary outcome was the alteration in lipid profile parameters:

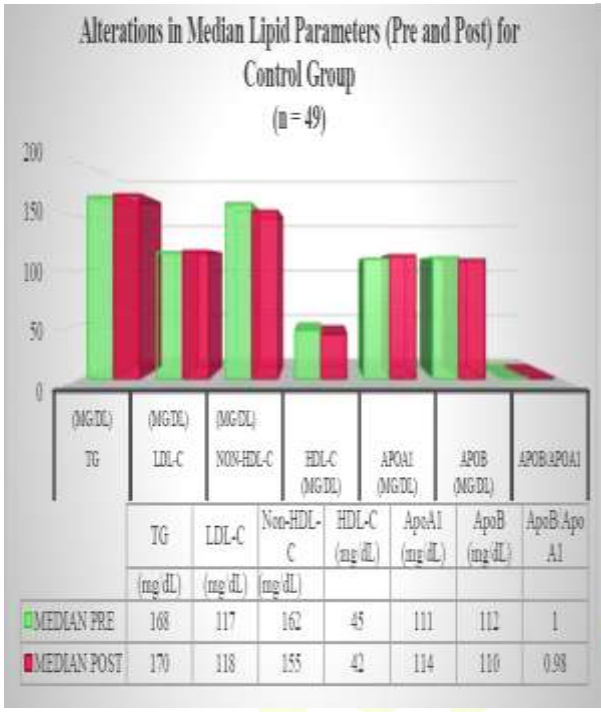
- Triglycerides (TG)
- Low-density lipoprotein cholesterol (LDL-C)
- High-density lipoprotein cholesterol (HDL-C)
- Non-HDL cholesterol (non-HDL-C)
- ApoB/ApoA1 ratio

Statistical Analysis

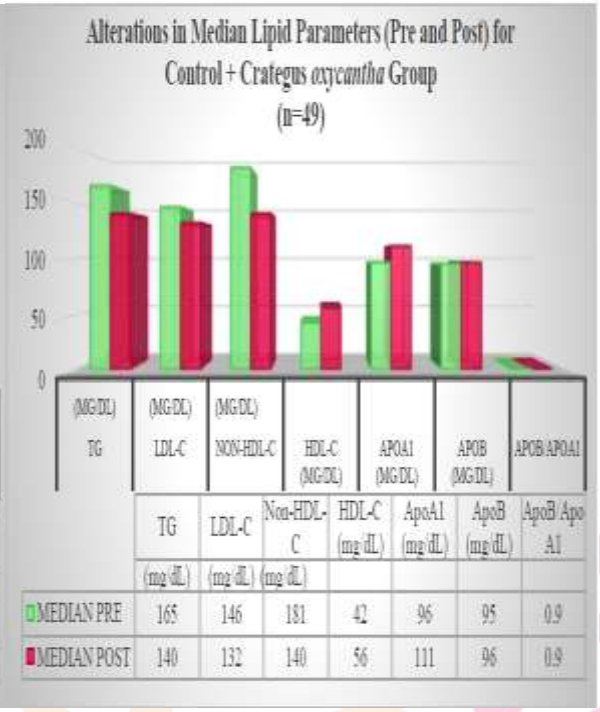
- IBM SPSS Statistics was used for data analysis.
- Wilcoxon signed-rank test assessed pre- and post-treatment changes.

RESULTS

Changes in Lipid Profile Parameters



	TG (mg/dL)	LDL-C (mg/dL)	Non-HDL-C (mg/dL)	HDL-C (mg/dL)	ApoA1 (mg/dL)	ApoB (mg/dL)	ApoB/ApoA1
MEDIAN PRE	168	117	162	45	111	112	1
MEDIAN POST	170	118	155	42	114	110	0.98



	TG (mg/dL)	LDL-C (mg/dL)	Non-HDL-C (mg/dL)	HDL-C (mg/dL)	ApoA1 (mg/dL)	ApoB (mg/dL)	ApoB/ApoA1
MEDIAN PRE	165	146	181	42	96	95	0.9
MEDIAN POST	140	132	140	56	111	96	0.9

Control Group:

- No significant alterations were observed in lipid parameters.
    - TG ($p = 0.017$), LDL-C ($p = 0.232$), non-HDL-C ($p = 0.127$), HDL-C ($p = 0.042$), ApoB/ApoA1 ($p = 0.204$).

Crataegus oxycantha Group:

- Significant reductions in:
    - TG ($p < 0.001$, $d = 0.273$)
    - LDL-C ($p < 0.001$, $d = 0.874$)
    - Non-HDL-C ($p < 0.001$, $d = 0.744$)
- Signific
- ant increases in:
    - HDL-C ($p < 0.001$, $d = 1.58$)
- Slight reduction in ApoB/ApoA1 ratio ($p = 0.080$)

DISCUSSION

Comparison with Previous Studies

- In previous studies, the effects of *Crategus oxycantha* on various parameter of Lipid profile have not been precisely analysed.
- This study precisely demonstrated the broader efficacy of *Crataegus oxycantha* by improving HDL-C and reducing TG and LDL-C, in contrast to statin therapy, which primarily targets LDL-C.

- This study also aligns with the findings of Wang et al. (2013), who reported *Crataegus oxycantha* - mediated lipid-lowering effects in animal models (7).

Future Scope

- Placebo-Controlled Studies: Future trials should employ double-blind, placebo-controlled methodologies to establish definitive efficacy.
- Mechanistic Research: Investigation into the molecular mechanisms of *Crataegus oxycantha* in lipid metabolism.
- Long-Term Cardiovascular Outcomes: Assessing its impact on atherosclerosis progression and cardiovascular event reduction.
- Comparative Trials: Direct comparisons with statins and fibrates to evaluate relative therapeutic potential.

Limitations

- Open-label design introduces potential bias.
- Sample size (98 participants) limits generalizability.

CONCLUSION

This study provides preliminary evidence that *Crataegus oxycantha*, when used as an add-on therapy, significantly improves lipid profiles in dyslipidemic patients. Its ability to increase HDL-C while reducing LDL-C and TG highlights its potential in complementary cardiovascular management. Further large-scale, placebo-controlled trials are needed to validate these findings and elucidate the mechanism of action.

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