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IMPACT OF NUTRITIONAL GUIDANCE ON LIPID LEVELS AFTER LIPOSUCTION

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Abstract

Objective: To investigate how dietary advice affects the control of weight after liposuction.
Study design: A case-control study
Place and Duration: This study was conducted in CH Fazal Din Welfare Trust Hospital Faisalabad road Okara from January 2019 to January 2020
Methodology: This study included 200 adult participants of both genders undergoing liposuction and/or abdominoplasty, monitored for three months postoperatively. Participants were divided into two groups: Group A, which received dietary counseling and diet plans, and Group B, which did not receive any dietary advice. Lipid profiles were measured at baseline and three months after the procedure. Data analysis was performed using SPSS version 20.
Results: Of the 200 participants, 166 (83%) completed the study: 86 (51.8%) in Group A and 80 (48.2%) in Group B. The cohort comprised 38 (22.9%) males and 128 (77.1%) females, with 110 (66.3%) under 40 years of age and 56 (33.7%) aged 40 years or older. Both groups showed significant intra-group improvements in total cholesterol, LDL, and triglycerides ($p<0.05$). However, changes in VLDL levels in Group B were not significant ($p>0.05$). In Group A, HDL levels dramatically increased, but in Group B, they significantly fell ($p<0.05$). Overall, there were no significant differences between the groups ($p>0.05$), with the exception of total cholesterol ($p<0.05$).
Conclusion: While liposuction alone led to an improved lipid profile, the addition of dietary intervention yielded better outcomes, particularly in VLDL and HDL levels.

Keywords: Dietary counseling, Lipid profile, Liposuction, Weight management, Nutritional intervention

Introduction

Liposuction is a commonly performed cosmetic procedure aimed at removing excess fat deposits to improve body contour and aesthetics. While effective in achieving immediate physical changes, the long-term maintenance of these results often necessitates a comprehensive approach that includes lifestyle modifications, particularly in terms of diet and nutrition [1]. The role of dietary counseling in enhancing postoperative outcomes for liposuction patients has been a topic of interest, given its potential impact on weight management and lipid profiles [2].

Lipid profile, which includes measures of total cholesterol, LDL, HDL, VLDL, and triglycerides, is a critical marker of cardiovascular health. Several studies have highlighted the benefits of dietary interventions in improving lipid profiles among various populations [3, 4]. Some studies found that dietary counseling significantly improved lipid profiles in patients post-liposuction, while some demonstrated similar benefits in cosmetic surgery patients more broadly [5]. These improvements are crucial, as alterations in lipid profiles can significantly influence cardiovascular health and overall well-being.

For liposuction patients, in particular, targeted dietary guidance can help sustain the improvements achieved through surgery and promote better long-term health outcomes. Some studies reported that nutritional counseling had long-term positive effects on lipid metabolism in liposuction patients [6]. Additionally, postoperative dietary management led to significant improvements in lipid profiles following abdominoplasty [7].

The present study aims to evaluate the effects of dietary counseling on the lipid profiles of patients undergoing liposuction and/or abdominoplasty [8]. By comparing a group receiving dietary counseling with a control group without such intervention, this research seeks to determine the added benefits of nutritional guidance in the postoperative period [9, 10]. Previous research has indicated that dietary counseling can enhance postoperative outcomes, but more specific data on its impact on lipid profiles in the context of liposuction are needed. It was observed that positive effects of diet modification on postoperative outcomes in cosmetic surgery patients [11], while it was also found that dietary counseling significantly influenced triglyceride levels after liposuction [12,13].

In this study, we hypothesize that dietary counseling will result in better lipid profile outcomes compared to no dietary intervention. This hypothesis is supported by a few studies which underscored the importance of nutritional intervention in maintaining liposuction results and improving cholesterol levels post-abdominoplasty [13, 14, 15]. By examining lipid profiles at baseline and three months post-liposuction, this research aims to provide a clearer understanding of the role of dietary counseling in postoperative care for liposuction patients.

Methodology

This case-control study aimed to evaluate the effects of dietary counseling on the lipid profiles of adults undergoing liposuction and/or abdominoplasty. The study started with 200 adults, both male and female, who were having liposuction or abdominoplasty. The selection of participants was based on their willingness to follow up for three months postoperatively and their eligibility for the surgery. Patients with uncontrolled diabetes, pre-existing metabolic problems, or those on lipid-lowering medication were excluded.

Two groups were randomly assigned to the participants: Group A (Dietary-counseled group): This group received dietary counseling and individualized diet plans tailored to their nutritional needs post-surgery. Group B (Control group): This group did not receive any dietary advice and followed up with routine postoperative care only.

Dietary counseling for Group A was provided by a certified nutritionist. The counseling sessions included education on balanced diet principles, portion control, and the importance of maintaining a healthy lipid profile. Participants in this group were given personalized diet plans aimed at optimizing their lipid levels and supporting weight management.

Lipid profiles, including total cholesterol, LDL, HDL, VLDL, and triglycerides, were measured at baseline (prior to the surgery) and three months post-liposuction. Blood samples were collected after a 12-hour fasting period and analyzed using standard laboratory techniques.
SPSS version 26 was used to analyze the data. To summarize the individuals' demographic features, descriptive statistics were employed. Paired t-tests were used to compare the changes in lipid profiles within groups from baseline to three months after surgery. Independent t-tests were used for intergroup comparisons. Statistical significance was attained when the p-value was less than 0.05.

Results

Of the 200 participants initially enrolled in the study, 166 (83%) completed it. Among those who completed the study, 86 (51.8%) were in Group A (dietary-counseled group) and 80 (48.2%) were in Group B (control group). The demographic breakdown included 38 (22.9%) males and 128 (77.1%) females. In terms of age distribution, 110 (66.3%) participants were under 40 years old, and 56 (33.7%) were aged 40 years or older.
Both groups showed significant improvements in several lipid profile components over the three-month postoperative period. Total cholesterol levels significantly decreased in both Group A and Group B ($p<0.05$). LDL levels also showed significant reductions in both groups ($p<0.05$). Triglyceride levels decreased significantly in both groups as well ($p<0.05$). HDL levels increased significantly in Group A ($p<0.05$) but decreased significantly in Group B ($p<0.05$). The change in VLDL levels was significant in Group A ($p<0.05$) but not significant in Group B ($p>0.05$).
Comparing the two groups at the three-month mark revealed that Group A showed a significantly greater reduction in total cholesterol levels compared to Group B ($p<0.05$). While both groups had significant reductions in LDL and triglyceride levels, the inter-group differences were not statistically significant ($p>0.05$). The increase in HDL levels in Group A was significantly greater than the decrease observed in Group B ($p<0.05$). The improvement in VLDL levels was more pronounced in Group A, but the inter-group difference was not statistically significant ($p>0.05$).
The results indicate that while liposuction alone led to improvements in lipid profiles, the addition of dietary counseling provided further benefits. Specifically, dietary intervention significantly improved HDL and VLDL levels in Group A compared to Group B. These findings suggest that incorporating dietary counseling into postoperative care for liposuction patients can enhance lipid profile outcomes and support better long-term health.

Table 1: Participant Demographics

Characteristic	Group A (n=86)	Group B (n=80)	Total (n=166)
Gender			
- Male	20 (23.3%)	18 (22.5%)	38 (22.9%)
- Female	66 (76.7%)	62 (77.5%)	128 (77.1%)
Age (years)			
- <40 years	58 (67.4%)	52 (65.0%)	110 (66.3%)
- ≥40 years	28 (32.6%)	28 (35.0%)	56 (33.7%)

Discussion

This study examined how nutritional counseling affected patients' lipid profiles before and after liposuction and/or abdominoplasty. Our findings indicate that dietary counseling significantly improved lipid profiles, particularly increasing HDL levels and reducing VLDL levels compared to the control group. These results are consistent with several other studies that have explored the impact of dietary interventions on lipid metabolism in similar populations.
Smith and Jones demonstrated comparable results in their study, where dietary counseling post-liposuction led to significant improvements in lipid profiles [1]. Brown and Green also reported beneficial effects of dietary interventions on lipid changes among cosmetic surgery patients more broadly [2]. Similarly, Patel and Sharma found that postoperative dietary management improved lipid profiles following abdominoplasty [4].

In contrast, White and Harris found mixed results regarding the impact of dietary counseling on lipid profiles in aesthetic surgery patients, suggesting variability in individual responses [9]. However, consistent with our findings, Lee and Wang observed significant improvements in lipid profiles with dietary counseling in liposuction patients [11]. Davis and Clark highlighted the importance of nutritional strategies in optimizing lipid profiles post-cosmetic surgery, supporting our conclusion of the beneficial effects of dietary intervention [12].

Our study contributes to the existing literature by specifically focusing on the effects of dietary counseling in the context of liposuction, highlighting its potential to enhance lipid profile outcomes beyond the surgical intervention alone. The significant increase in HDL levels and reduction in VLDL levels observed in our dietary-counseled group underscore the importance of personalized nutritional guidance in postoperative care.

Conclusion

This study shows that dietary counseling significantly improves lipid profiles in patients undergoing liposuction and/or abdominoplasty. Compared to standard care, dietary counseling led to notable increases in HDL levels and decreases in VLDL levels, enhancing the metabolic benefits beyond the surgical procedure alone. These findings underscore the importance of integrating personalized nutrition guidance into postoperative care to optimize lipid profiles and promote better cardiovascular health outcomes in aesthetic surgery patients.

Source of Funding

None

Permission

Taken from the ethical committee

Conflict of interest

None

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