



ASSOCIATION OF HYPERLIPIDEMIA IN PATIENTS WITH ANDROGENETIC ALOPECIA: A COMPARATIVE STUDY

Dermatology

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ABSTRACT

Background: Androgenetic alopecia (AGA) is the most common cause of patterned hair loss and has been associated with metabolic abnormalities, particularly dyslipidemia. **Aim:** To compare the lipid profile of patients with androgenetic alopecia and healthy controls and determine the association between AGA severity and hyperlipidemia. **Materials and Methods:** A comparative observational study was conducted on 120 male participants comprising 60 patients with androgenetic alopecia and 60 age-matched healthy controls. Fasting serum lipid profile including total cholesterol (TC), triglycerides (TG), low-density lipoprotein (LDL), and high-density lipoprotein (HDL) was assessed. Statistical analysis was performed using SPSS software, and $p < 0.05$ was considered statistically significant. **Results:** Patients with androgenetic alopecia had significantly higher serum total cholesterol, LDL cholesterol, and cholesterol/HDL ratio, whereas HDL cholesterol levels were significantly lower than controls. Lipid abnormalities increased with the severity of androgenetic alopecia. **Conclusion:** Androgenetic alopecia is significantly associated with dyslipidemia. Screening for lipid abnormalities should be considered in patients presenting with AGA for early identification of cardiovascular risk.

KEYWORDS

Androgenetic alopecia, Hyperlipidemia, Dyslipidemia, Lipid profile, LDL, HDL.

INTRODUCTION

Androgenetic alopecia (AGA) is a chronic, progressive, non-scarring alopecia caused by genetic predisposition and androgen sensitivity. It affects a large proportion of the adult population and significantly impacts quality of life. Recent studies have demonstrated an association between AGA and metabolic disorders, particularly dyslipidemia, which increases the risk of cardiovascular disease. Early identification of lipid abnormalities in patients with AGA may facilitate timely intervention and reduce long-term cardiovascular complications.

MATERIALS AND METHODS

A hospital-based comparative observational study was carried out in the Department of Dermatology. Sixty clinically diagnosed male patients with androgenetic alopecia were included as cases, while sixty age-matched healthy males without AGA served as controls.

Inclusion Criteria

- Male patients aged 20–40 years.
- Clinically diagnosed androgenetic alopecia.
- Willing to participate in the study.

Exclusion Criteria

- Patients receiving lipid-lowering drugs.
- Diabetes mellitus, hypothyroidism, chronic renal or liver disease.
- Other causes of hair loss.

After obtaining informed consent, fasting venous blood samples were collected for estimation of serum total cholesterol, triglycerides, HDL cholesterol, and LDL cholesterol. Statistical analysis was performed using SPSS software. A p -value < 0.05 was considered statistically significant.

RESULTS

Table 1. Baseline Characteristics

Variable | Cases (n=60) | Controls (n=60)
Mean Age (years) | 29.8 ± 5.2 | 29.3 ± 5.0
Mean BMI (kg/m^2) | 24.9 ± 3.1 | 23.8 ± 2.8

Table 2. Comparison of Lipid Profile

Parameter | Cases | Controls | P-value
Total Cholesterol | Higher | Lower | < 0.05
Triglycerides | Higher | Lower | > 0.05
HDL Cholesterol | Lower | Higher | < 0.05
LDL Cholesterol | Higher | Lower | < 0.05
Cholesterol/HDL Ratio | Higher | Lower | < 0.05

Table 3. Distribution of AGA Severity

Grade III 18 (30.0%)
Grade IV 20 (33.3%)
Grade V 13 (21.7%)
Grade VI 9 (15.0%)

Table 4. Association Between Severity of AGA and Lipid Profile

- Mild: TC normal to mildly increased, LDL mild increase, HDL normal
- Moderate: TC moderately increased, LDL increased, HDL mildly decreased
- Severe: TC markedly increased, LDL markedly increased, HDL markedly decreased.

DISCUSSION

The present study demonstrates a significant association between androgenetic alopecia and dyslipidemia. Patients with AGA showed higher levels of total cholesterol and LDL cholesterol together with lower HDL cholesterol than healthy controls. These findings are consistent with previous studies that suggest AGA may represent an early clinical marker of metabolic syndrome and cardiovascular disease. Early lipid screening and lifestyle modification may therefore be beneficial in patients presenting with androgenetic alopecia.

CONCLUSION

Androgenetic alopecia is associated with an abnormal lipid profile, particularly increased total cholesterol and LDL cholesterol together with reduced HDL cholesterol. Routine lipid profile screening in patients with AGA may facilitate early diagnosis and management of cardiovascular risk factors.

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