Original Research

Assessment of biochemical parameters in patients with skin tags

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ABSTRACT:

Background: Often found on the eyelids, neck, and axillae, acrochordon or fibroepithelial polyps, also referred to as skin tags (STs), are among the most prevalent benign skin conditions. The present study was conducted to assess biochemical parameters in patients with skin tags. **Materials & Methods:** 56 patients of skin tags of both genderswere put in group I and controls in group II. Height, weight and waist circumference were measured. Parameters such as total cholesterol (TC) and total triglycerides (TG) was measured by an enzymatic method. Serum high density lipo-protein (HDL) by phosphotungstate precipitation, followed by enzymatic method, serum low density lipo-protein (LDL) cholesterol and very low density lipo-protein (VLDL) cholesterol by using Friedewald's formula was calculated. TC/ HDL and LDL/HDL ratio were also calculated. **Results:** Group I had 36 males and 20 females and group II had 28 males and 28 females. In group I and group II, TC was 204.6 and 162.0, TG was 150.2 and 112.8, LDL was 114.2 and 86.2, HDL was 38.4 and 43.2, VLDL was 34.0 and 26.4, TC/ HDL was 5.6 and 4.5, LDL/HDL was 2.9 and 1.3 and leptin was 76.2 and 64.4 in group I and II respectively. The difference was significant (P< 0.05). **Conclusion:** Patients with STs had higher biochemical parameters. Patients with STs require appropriate therapies, such as quitting smoking, losing weight, and altering their eating patterns. Additionally, STs might be useful in the early detection of metabolic syndrome.

Keywords: eyelids, neck, skin tags

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INTRODUCTION

Often found on the eyelids, neck, and axillae, acrochordon or fibroepithelial polyps, also referred to as skin tags (STs), are among the most prevalent benign skin conditions. They are composed of skin that protrudes from the surrounding skin. The cause of STs is still a mystery.

Skin rubbing, obesity, metabolic syndrome, and hormone imbalance are a few of the contributing variables. According to histology, STs is a polypoid lesion with a nerveless dermis, a loose, edematous fibrovascular core with mild chronic inflammation, and an overlaying weakly acanthotic epidermis.[1]

STs have been linked in a number of studies to diseases like Crohn's disease, obesity, diabetes mellitus, acromegaly, and atherogenic lipid profiles.[2]

In both industrialized and emerging nations, the prevalence of obesity is rising at a startling rate. According to several surveys, between 30 and 65 percent of persons in India's cities are overweight, obese, or have abdominal obesity. Insulin resistance and abdominal obesity are major risk factors for diabetes, dyslipidemia, and cardiovascular disease.[3]

Adipose tissue secretes the protein leptin, which is crucial for immunity and metabolism. It controls hunger, energy expenditure, and body weight.[4] Cardiovascular risk factors such as obesity, insulin resistance, hypertension, dyslipidemia, hyperuricaemia, and inflammatory markers are strongly correlated with plasma leptin. Additional research is necessary in the domain of obesity and STs, even if the relationship between STs and insulin resistance and lipid profile was shown in earlier studies.[5,6] The present study was conducted to assess biochemical parameters in patients with skin tags.

MATERIALS & METHODS

The study was carried out on 56 patients of skin tags of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Patients of skin tags were put in group I and controls in group II. Height, weight and waist circumference were measured. BMI was calculated as weight in kg

divided by the square of the height in meters. Overweight was defined as BMI 25-30 kg/m2, and obesity was defined as BMI >30 kg/m2. Leptin serum level was determined by enzyme linked immunosorbent assay (ELISA). Parameters such as total cholesterol (TC) and total triglycrides (TG) was measured by an enzymatic method. Serum high density lipo-protein (HDL) by phosphotungstate precipitation, followed by enzymatic method, serum low density lipo-protein (LDL) cholesterol and very low density lipo-protein (VLDL) cholesterol by using Friedewald's formula was calculated. TC/ HDL and LDL/HDL ratio were also calculated.Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

| Groups	Group I	Group II
Status	Skin tags	Healthy
M:F	36:20	28:28

Table I shows that group I had 36 males and 20 females and group II had 28 males and 28 females.

Table II Comparison of parameters

Parameters	Group I	Group II	P value
TC	204.6	162.0	0.01
TG	150.2	112.8	0.02
LDL	114.2	86.2	0.01
HDL	38.4	43.2	0.04
VLDL	34.0	26.4	0.03
TC/ HDL	5.6	4.5	0.05
LDL/HDL	2.9	1.3	0.02
Leptin	76.2	64.4	0.04

Table II, graph I shows that in group I and group II, TC was 204.6 and 162.0, TG was 150.2 and 112.8, LDL was 114.2 and 86.2, HDL was 38.4 and 43.2, VLDL was 34.0 and 26.4, TC/ HDL was 5.6 and 4.5, LDL/HDL was 2.9 and 1.3 and leptin was 76.2 and 64.4 in group I and II respectively. The difference was significant (P< 0.05).

Graph I Comparison of parameters
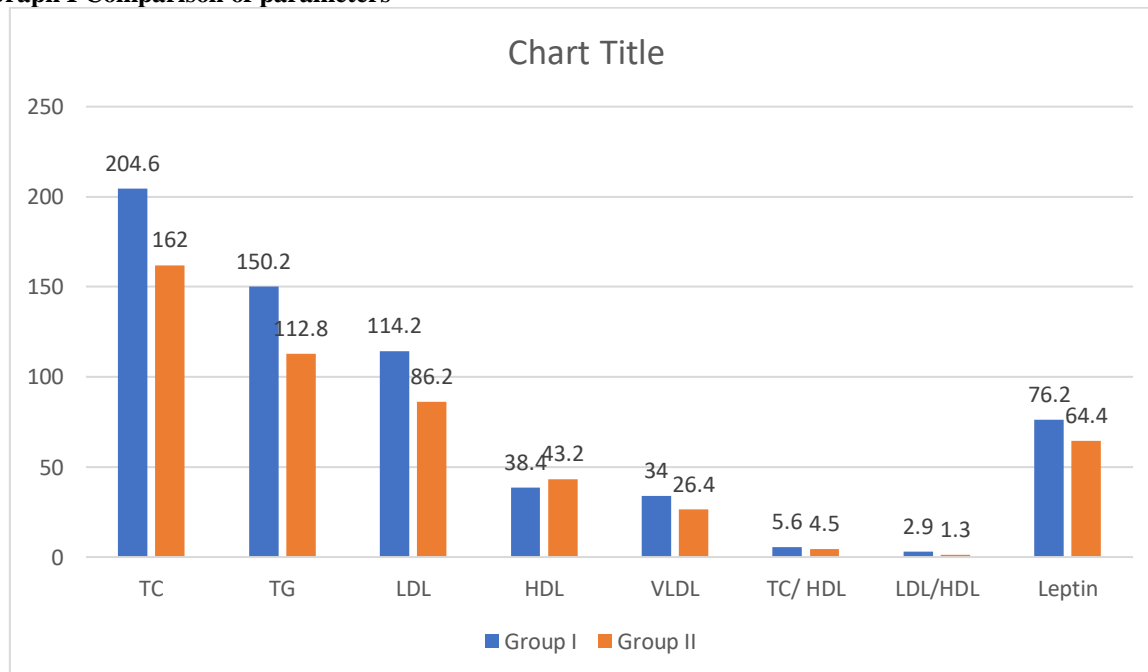
DISCUSSION

Skin tags are among the most prevalent fibrous skin lesions. Until they become inflamed or irritated, skin tags typically do not cause pain and remain asymptomatic.[7,8] The majority of skin tag sufferers see a doctor for aesthetic purposes. Obesity and non-insulin dependent diabetes mellitus are commonly linked to several STs.[9]The present study was conducted to assess biochemical parameters in patients with skin tags.

We found that group I had 36 males and 20 females and group II had 28 males and 28 females. Wali et

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al[10]highlighted the association of lipid profile, BMI, glucose, HbA1c and leptin levels in patients with STs. The cases were chosen those who are having minimum of 3 STs attending the dermatology clinic. A total of 171 patients were screened, out of which 126 satisfied the criteria for inclusion and were included in the final analysis. The significance of the difference between the groups was assessed by Student t-test (two tailed, independent) to find the significance on continuous scale between two groups on metric parameters, between cases and controls. Maximum cases were in males and in age group of 41-50 years. There was significant association between STs and triglycerides, low density lipoprotein, very low-density lipoprotein cholesterol and leptin levels. Other parameters were also altered but no statistically significant difference was seen.

We found that in group I and group II, TC was 204.6 and 162.0, TG was 150.2 and 112.8, LDL was 114.2 and 86.2, HDL was 38.4 and 43.2, VLDL was 34.0 and 26.4, TC/ HDL was 5.6 and 4.5, LDL/HDL was 2.9 and 1.3 and leptin was 76.2 and 64.4 in group I and II respectively. Rasi et al[11] studied association between skin tags and dyslipidemia.Among 152 patients, there were 89 females (58.5%) and 63 males (%41.5). Based on the TLGS study 136 men and 220 women enrolled the control group of study. The mean age was 28.4 years. Patients trained to have normal free diet for at least 1 month then referred to the laboratory. Blood samples were taken over 12 hours fasting with 2 hours intervals. Hypertriglyceridemia was defined as plasma level ≥ 160 mg/dl for men and ≥ 130 mg/dl for women. Hypercholesterolemia pointed at its value >200 mg/dl. Normal HDL levels was defined as >39 mg/dl for men and >35 mg/dl to women. The mean skin tag number was 12.6 per subject. The most frequent localizations of skin tags were neck and upper chest (mean number: 13.4, 48.9%) followed by axilla (mean number: 11.6, 33%) and breast (10.2, 10.1%) in the patient group. The mean cholesterol level of case group was 192.2 ± 33.1 mg/dl, while it was 187.0 ± 42 mg/dl in the control group). The mean $\pm$ SD for triglyceride was 132.1 ± 69 mg/dl in comparison to 129 ± 74 in the control group.

Gorpelioglu C et al[12]investigated the relationship between serum leptin, atherogenic lipid and glucose levels in patients with skin tags and healthy controls.A total of 58 patients, with at least three skin tags, aged 24 to 85 years, and 31 healthy controls aged 30 to 70 years, were examined in the present study. The subjects in all the groups were selected with statistically similar Body Mass Index (BMI). Fasting concentrations of plasma glucose, serum lipids including triglyceride, total cholesterol, and high-density lipoprotein cholesterol (HDL) and low-density lipoprotein cholesterol (LDL), HbA1c, and leptin were measured by enzyme-linked immunosorbent assay (ELISA). In addition, serum LDL level was calculated using Friedewald's formula.There was no significant difference in age, sex, BMI, HbA1c, triglyceride, HDL and leptin levels between the groups. Skin tags group showed significantly higher levels of total cholesterol and LDL, when compared with the healthy controls groups ($P < 0.01$). In addition, regression analysis showed that leptin level was positively correlated to serum triglyceride level (r = 0.265, P = 0.044).

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that patients with STs had higher biochemical parameters. Patients with STs require appropriate therapies, such as quitting smoking, losing weight, and altering their eating patterns. Additionally, STs might be useful in the early detection of metabolic syndrome.

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