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Original Article

A BIOCHEMICAL PROFILE ON PATIENTS WITH XANTHELASMA PALPEBRARUM: A CLINICAL STUDY

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ABSTRACT

Background: Xanthelasma palpebrarum refers to fat deposition that occurs on eyelids and inner canthi. It may be associated with certain systemic conditions. **Aims:** 1.To find the relationship between Xanthelasma palpebrarum and biochemical lipid profile. 2. To find the relationship between the parameters of age, sex, comorbid illness, with Xanthelasma palpebrarum. **Methods:** In this type of Case control study, 50 cases with Xanthelasma palpebrarum and 50 healthy individuals were selected. All cases and controls underwent clinical examination and fasting lipid profile study. **Result:** Total cholesterol levels were increased in 64% (32 cases) as compared to 19 controls (38%) with p=0.009, making it highly significant. LDL cholesterol levels were increased in 41 cases (82%) as compared to 30 controls (60%) making it statistically significant with a p value of 0.015. No significant relationship was observed with respect to other cholesterol parameters. **Conclusion**: This study shows that there is a significant elevation in total cholesterol and LDL cholesterol in Xanthelasma palpebrarum patients as compared to controls, thus making lipid profile compulsory for all patients with Xanthelasma.

Keywords: *Xanthelasma palpebrarum (XP), Lipid profile*

INTRODUCTION

Xanthelasma palpebrarum(XP)refers to xanthoma that occurs on eyelids and inner canthi. The term 'Xanthoma' means 'yellow tumour" i.e. deposition of fat or lipid over the eyelids and around the eye [1]. It was Erasmus Wilson[2]. who first coined the term xanthelasma nearly more than 100 years ago. Xanthelasma is derived from two Greek terms "xanthos" (yellow) and "elasma" (beaten metal plate). The commonest type of cutaneous xanthoma, is Xanthelasma palpebrarum. It's symmetrical, bilateral and permanent. XP is highly associated with atherosclerosis, cardiovascular disease, diabetes, obesity and pancreatitis[1]. Xanthelasma usually is seen in the 3rd – 5th decade, more commonly seen in women than in men. These xanthomas are yellowish in colour and are soft, velvety lesions on the eyelids[1]. The exact cause is not known however any disturbance in the lipid metabolism contributes to its etiopathogenesis [3]. Type V Hypolipoproteinemia often result in deposition of cholesterol in the skin. The risk of Coronary Artery Disease is more commonly associated with individuals presenting with XP than without XP[4]. The LDL accumulated in the blood, lines along the wall of capillary blood vessels. When biochemical lipid profiles are considered for patients presenting with XP, it is noticed that there is a higher level of LDL and VLDL cholesterol and lower level of HDL cholesterol which is an important predictor for Coronary Artery Disease (CAD) [5].

MATERIALS AND METHODS

Study design: A descriptive case control study

Inclusion Criteria: Patients attending Dermatology and Ophthalmology OPD with xanthelasma palpebrarum. Patients of the age group 25-80 years and both sexes. Patients willing to undergo lipid profile test and giving consent. Similarly the age matched and disease free subjects taken as control group.

Study period: Sept 2012 to Sept 2013.

Prior to the study an informed consent was obtained from the patients and the protocol was approved by the ethical committee of our Institution. **Grouping:** Group A consist age and sex matched 50 Controls without Xanthelasma Palpebrarum and Group B consist of 50 CASES with Xanthelasma Palpebrarum. All were subjected to undergo lipid profile test after which the study was carried.

Methodology: A detailed history was taken from all the 50 patients regarding the skin lesion, in respect to appearance and duration of lesion. Past history regarding any systemic conditions like hypertension, diabetes mellitus, hyperlipidemia and their respective form of treatment were taken into account. Family history of xanthomas was also noted. General and systemic examination was also done for all cases. All subjects underwent a detailed cutaneous examination and morphology of the lesion in the eyelids noted. All cases (subjects and controls) underwent lipid profile study (Total cholesterol, LDL cholesterol, HDL cholesterol, VLDL) in empty stomach. From each patient (Control and Case) 2ml of blood was collected aseptically and serum was separated by centrifugation. Within 24 hours, the sample was analyzed for lipid profile and the datas were entered.

Statistical analysis: Collected data were analyzed by 't' test & chi-square test.

RESULTS

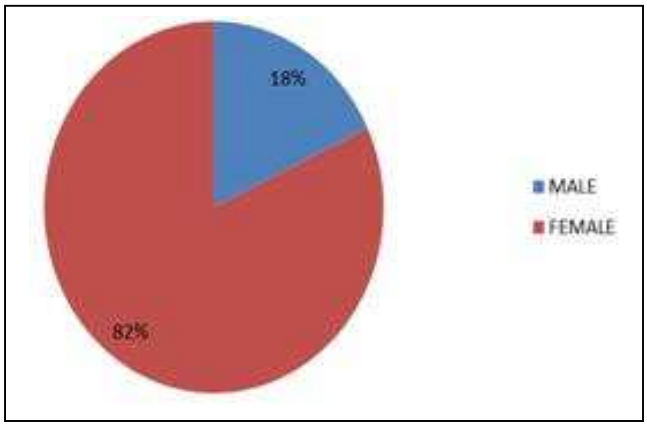

Fig 1: Sex Distribution

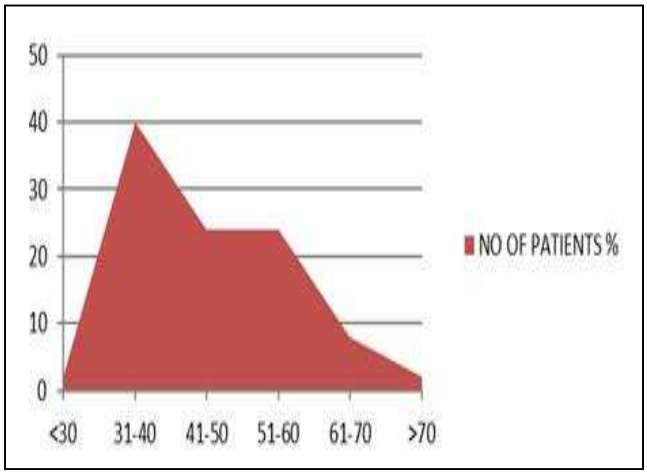

Fig 2: Age Group Distribution

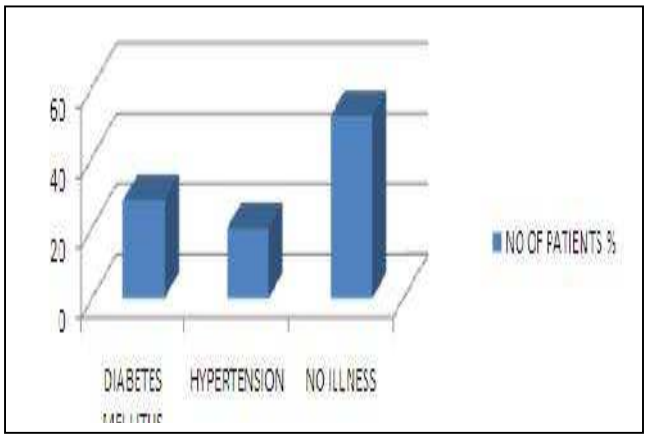

Fig 3: Comorbid illness

Table 1: Descriptive

Comorbid condition	No of patients	Percentage
DIABETES MELLITUS	14	28
HYPERTENSION	10	20
NO ILLNESS	26	52

Table 2: Lipid profile analysis in patients with XP

Parameter	Group A (control)	Group B (case)	P value
LDL	200±1.9	284±2.1	0.015
HDL	75±1.3	72±1.1	0.110 (NS)
VLDL	70±1.5	205±0.9	0.673(NS)
TC	301±2.4	383±2.2	0.009

NS: Not significant

DISCUSSION

Our study showed a female preponderance with 41 females (82%) and 9 males (18%) among the 50 cases. Female to male ratio of 4.5:1 was observed. This was in accordance with the study done by Jain et al [6], Gangopadadhya et al [7], Epstein et al [8] and Pedace et al[9]. Reddy et al found a peak incidence in the age group of 31-40 years. Gangopadadhya et al [7] noted that highest number of cases (30%) were in the age group of 31- 40 years. Jain et al[6] also observed that majority of the patients were in the age group of 31- 50 years (37.9%). Chhetri et al [10].observed a peak in the age group of 40- 50 years (41.84%). This was in concurrence with our study in which the mean age of the cases were 50.56 years and majority of the cases i.e. 40% came in the age group of 30- 40 years.

Gangopadadhya et al reported Diabetes Mellitus (DM) in 20% of patients, Hypertension (HTN) in 32.5% and xanthoma in 2.5% of patients[7]. In study by Jain et al 42.4% of patients had associated systemic diseases like HTN and DM. Epstein et al reported a history of HTN in 28.6% cases. Incidence of DM associated with XP was reported to be 6% by Ribera et al and 34.2% by Vacca et al . In our study Hypertension was seen in 10 cases (20%) and Diabetes Mellitus was seen in 14 cases (28%) and 26 of the 50 cases had no illness.

Jain et al reported 72.7% had both eyelids involvement[6]. Chhetri et al reported bilateral lesions in 39% cases, two eyelids involvement in 53.2% cases. Ribera et al reported 42.6% in both the eyelids [11]. Examination in our study showed that 31 cases (62%) had bilateral lesions and that majority of xanthelasma were found near the medial canthus of the eyelids, 14 cases (45.16 %). Tursen et al [12] reported that clinically xanthelasma are usually plaque like yellow lesions. Chhetri et al observed that the lesion was yellowish in colour, flat topped and slightly raised from the surface. Whereas in our study, we have noticed that plaque like lesions were more commonly seen than the papular type of lesions.

Comparison of total cholesterol and XP showed 32 cases (64%) with p=0.009, making it highly significant. Gangopadadhya et al showed 40% patients (significant) and Pedace et al[9] showed 59.8% patients as significant. Comparison of LDL cholesterol and XP in our study showed increased LDL cholesterol levels in 41cases (82%) which was statistically significant with p value of 0.015. Our study showed a decrease in HDL cholesterol in 21 cases (42%) with a non-significant p value of 0.110. This was in accordance with the study done by Ribera et al [13] with 31.3% (significant) values. Jain et al[6] observed a significant increase in VLDL levels in patients with XP as compared to controls (p<.01,p=0.001). But in our study VLDL cholesterol were increased in 18 cases (36%) and 16 controls (32%) and showed a non-significant p value of 0.673.

Total cholesterol levels were increased in 32 cases (64%) in our study with p=0.009, making it highly significant. LDL levels were 82% making it significant. This shows that in our study along with the concordance of other articles that Total cholesterol levels and LDL levels are not only high but are highly statistically significant. This proves that there is a

correlation between the total cholesterol levels and LDL levels with individuals presenting with XP in the OPD with or without systemic involvement. The HDL levels are lower and there is an increase in the VLDL levels, but there seems to be no statistically significant 'p' value making these lipid values insignificant in relationship with XP. Therefore in this current study there is a correlation of XP with total cholesterol and LDL values and this by itself can be a potential risk and an indicator for atherosclerosis and CAD.

CONCLUSION

This study shows that there is a significant elevation in total cholesterol and LDL cholesterol in Xanthelasma palpebrarum patients as compared to controls, thus making lipid profile compulsory for all patients with Xanthelasma. Females were most commonly affected than males. Most of the cases were in the age group of 30-40 years. Hypertension and diabetes mellitus are the two commonly associated Comorbid illnesses**.**

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Conflict of interest: Nil

REFERENCES

1. IADVL text book of Dermatology, R.G.Valia, third edition, Mumbai, Bhalani publishing house, 2001. Volume 2, Pg: 1300-01.
2. Bergman R. The pathogenesis and clinical significance of xanthelasma palpebrarum. J Am Acad Dermatol 1994; 5(2): 236- 42.
3. Ozdol S, Sahin S, Tokgozoglu L. Xanthelasma palpebrarum and its relation to atherosclerotic risk factors and lipoprotein(a). Int J Dermatol 2008; 47(3): 785- 9.
4. Reddy SNB, Singh G, Pandey SS, Tiwari D. Clinical and Lipid profile studies in xanthelasma palpebrarum. Indian J Dermatol Venereol Leprol 1983; 49(4): 127- 31.
5. Watanabe A, Yoshimura A, Wakasugi T, Tatami R, Ueda K, Ueda R et al. Serum lipids, lipoprotein lipids and coronary heart disease in patients with xanthelasma palpebrarum. Atherosclerosis 1981; 38(1): 283- 90.
6. Jain A, Goyal P, Nigam PK, Gurbaksh H, Sharma RC. Xanthelasma palpebrarum clinical and biochemical profile in tertiary care hospital of Delhi. Indian J Clin Biochem 2007; 22(3): 151- 3.
7. Gangopadadhya DN, Dey SK, Chanda M, Pal D, Chaudhuri S. Serum lipid profile in xanthelasma. Indian J Dermatol 1998; 43(3):53- 7.
8. Epstein NN, Rosenman RH, Gofman JW. Serum lipoproteins and cholesterol metabolism in xanthelasma. AMA Arch Derm Syphilol 1952; 65(2): 70- 81.
9. Pedace FJ, Winkelmann RK. Xanthelasma palpebrarum. JAMA 1965; 193(1): 893- 4.
10. Chhetri MK, Chowdhury ND, De B. Xanthelasma palpebrarum: An analysis of 141 cases. J Assoc Physicians India 1967; 15(2): 405-12.
11. Ribera M, Pinto X, Argimon JM, Fiol C, Pujol R, Ferrandiz C. Lipid metabolism and apolipoprotein E phenotypes in patients with xanthelasma. Am J Med 1995; 99(3):485- 90.
12. Vacca JB, Knight WA Jr, Broun GO Sr. Clinical observations regarding xanthelasma. Ann Intern Med 1959; 51(1): 1019- 31
13. Tursen U, Eskandari G, Kaya TI, Tamer L, Ikizoglu G, Atik U.Apolipoprotein Epolymorphism and lipoprotein compositions in normolipidaemic xanthelasma patients. J Eur Acad Dermatol Venereol 2006; 20(2): 260- 3.