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ASSESSMENT OF FASTING BLOOD GLUCOSE AND HBA1C AMONG SKIN TAGS PATIENTS IN KHARTOUM STATE

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ABSTRACT

Background: skin tags(STs) known as acrochordon or fibro epithelial polyp, are the most common benign skin lesion, consisting of skin projecting from the surrounding skin, usually occurring on the eyelids, neck and axilla of middle-age of elderly people. Several studies were conducted in which the skin tags serve as marker for diabetes mellitus. **Methodology**: This was a case control study conducted at Khartoum state-Sudan from February 2016 to May 2016. The cases were chosen those who are having minimum of 3 Skin Tags attending to dermatology clinic, Sex and age distributions in the study groups were similar. **Results**: A total of 120 participants, 60 patients satisfied the criteria for inclusion and 60 as control were included in the final analysis. The significance of the difference between the groups was assessed by Student t-test (two tailed, independent).The HbA1c and FBG levels were significantly higher in patients compared with controls (*p* –value 0.000). Correlation between case FBG and HbA1c levels were positive associated with STs Number with P-value 0.002, 0.001 respectively. **Conclusion**: STs are associated with impaired glucose metabolism.

KEYWORDS: Skin tags (STs), diabetes mellitus, acrochordon, Fasting Blood Glucose (FBG), HbA1c.

INTRODUCTION

Skin tags (acrochordons) are the common small benign connective tissue tumor of the dermis, most are minute 1 to 5 mm in the length, flesh colored to hyper pigmented pedunculated papilloma.[1] Characteristically attached by short, thin stalk. They are most common on the neck, axilla and skin folds.[2] They are also name soft fibromas, fibro epithelial polyps.[3] These lesions are extremely common in adult population over 40 year of age and increase incidence in the elderly.[4] Acrochordons are most frequent in obesity[5], hormonal imbalance[6] metabolic syndrome[7] and other condition have been reported as contributing factors. Histological, Skin tags classify as fibromas with hyperplasic epidermis connected to the skin on connective tissue stalk.[8] The over lining epidermis is essentially normal. The skin tags appear as an outgrowth of skin. The dermis appear normal and there is a minimal inflammatory infiltrate present.[1] Skin tags remain asymptomatic and are usually not painful unless they become inflamed or irritated.[16] Most patients with skin tags consult a doctor for cosmetic reasons. Multiple STs are frequently associated with non-insulin dependent diabetes mellitus and obesity.[19]

Many current researches study showed that skin tags are commonly associated with over Diabetes Mellitus and impaired glucose tolerance.[9, 10] Also there have been a few reports that the presence of skin tags is associated with Diabetes Mellitus, obesity, hypertension and atherogenic lipid profile and insulin resistance.[9-18] This study aimed to detect correlation between skin tags and diabetes mellitus in Khartoum state.

MATERIALS AND METHODS

This was a case control study conducted at Khartoum state-Sudan from February 2016 to May 2016. The patients were chosen who are having minimum of 3 STs attending the dermatology clinic and all patient were examined by the same dermatologist. The controls were selected from the out-patient department without STs. Sex and age distributions in the study groups were similar. Informed consent was obtained from all the participants. The following were exclusion criteria, patient taking any drugs that could alter glucose metabolism, secondary disease with possible alternating glucose such as hepatic disease, patient with acromegaly, Cushing´s syndrome and pregnant women were excluded from the study. Blood was drawn from participants had over night fast after meal stable for two days. FBG are measure in serum immediately from fluoride oxalate container by hexokinase (GLU3 Roche) method using Cobas Integra 400 analyzer, and HbA1c also determined

immediately from whole blood immunoturbidimetricly (A1c2 Roche) using the same analyzer.

The data was record in Microsoft excel and analyzed using SPSS software (version 16). P-value of <0.05 was considered are statically significant.

RESULTS

A Total of120 participants, 60 patients patient [34 (56.7%) female and 26 (43.3% male)] were statified the criteria for inclusion and 60 healthy control [34 (56.7%) female and 26 (43.3% male)] healthy control, were included in the final analysis. All the results were expressed as mean ±SD value. The comparison of glucose and HbA1c level, age and gender among study subjects is shown in (Table -1). The correlation of FBG and HbA1c with age, gender and STs (number and localization) among patient subject is shown in (Table-2). The correlation between FBG, HbA1c to STs number show in (figure 1 and 2) respectively.

Table 1: show the Comparison of Fasting Blood Glucose (FBG) and HbA1c level, age and gender among study subjects.

		Case (60)	Control (60)	p-value
Age	**Mean**	**32.0**	**30.5**	**0. .482**
	SD	**11.76**	**11.56**	
Gender	**Male**	**26 (43.3%)**	**26 (43.3%)**	**0.482**
	Female	**34 (56.7%)**	**34 (56.7%)**	
FBG	**Mean**	**115.5**	**88.72**	**0.000**
(mg/dl)	**SD**	**13.115**	**11.483**	
HbA1c	**Mean**	**5.980**	**4.608**	**0.000**
(%)	**SD**	**0.583**	**0.531**	

The analyses were done by using independent t-test, p-value of <0.05 were considered as statistically significant.

Table 2: shows correlation between FBG and HbA1c, age and gender among STs Subject.

		FBG	HbA1c
Age	R^2	0.121	0.101
	P-value	0.188	0.272
Gender	R^2	-0.112	-0.102
	p-value	0.221	0.270
Location of STs	R^2	-0.66	-0.031
	p-value	0.617	0.313
Number of STs	R^2	0.385**	0.429**
	P-value	0.002	0.001

**. Correlation is significant at the 0.01 level (2-tailed).
R^2: Pearson Correlation.

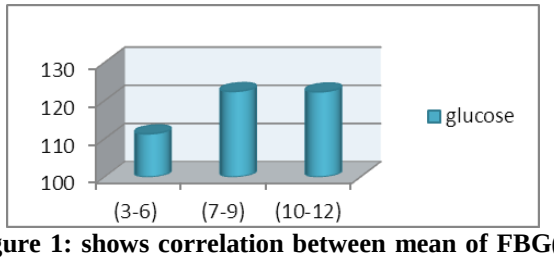

Figure 1: shows correlation between mean of FBG(Y axis) to number of STs (X-axis) among patient group, p-value <0.05.

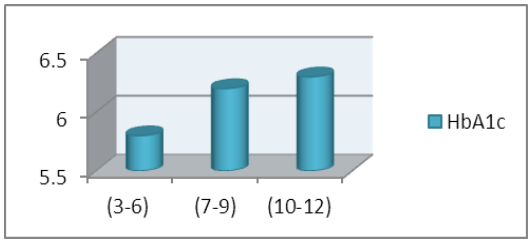

Figure 2: shows the positive correlation between mean of HbA1c (y-axis) to number of STs(X-axis) among patient group, p-value <0.05.

DISCUSSION

The finding of this study showed the association between STs and various biochemical parameters related to diabetes, and the overall FBG 49(81.6%) patient were impaired FBG according to WHO criteria. The glucose and HbA1c levels were higher in patients with STs and were statistically significant [Table 1]. These results go in accordance with the finding of other studies which have found a relationship between STs and diabetes mellitus.[17,20] A recent study[21], using oral glucose tolerance test, showed an increased risk of diabetes mellitus in patients with STs. A relationship between STs and diabetes mellitus has also been reported in a study conducted by Bahgat and Safory[22] And disagree to study conducted by Gorplioglu et al, there was no different in HbA1c.[23] There is no significant correlation between age and STs and this agree with tamega[4] and disagree with thappa.[10] There is no significant correlation between age and STs and this agree with tamega.[4] The most frequent localization of acrochordon was face and neck.

CONCLUSION

In the present study, there is significant association of STs with glucose and HbA1c levels. Patients with STs need suitable interventions like change in dietary habits. STs may also play a role in early diagnosis of metabolic syndrome as diabetes mellitus.

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