The Serum Lipid Profile of Patients with Skin Tag in Dr. Mohammad Hoesin General Hospital Palembang

Khairani[1], Yuli Kurniawati[1], Mutia Devi[1], Kemas Yakub Rahadiyanto[2]*
[1]*Department of Dermatology and Venereology Faculty of Medicine Sriwijaya University/Dr. Moh. Hoesin General Hospital Palembang, Jendral Sudirman Street Km 3.5, Palembang,South of Sumatera, Indonesia*
[2]*Medical Division of Bioethics and Humanitarian, Department of Clinical Pathology, Faculty of Medicine Sriwijaya University, Dr. Mohammad Ali Street, Palembang,South of Sumatera, Indonesia*

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Abstract: Skin tag is common benign lesion composed of loose fibrous tissue which present mainly on the neck and major flexures as small soft pedunculated papule. Recent study suggest that the presence of skin tag is associated with abnormal serum lipid profile. This study is to describe the serum lipid profile of patients with skin tag. This is descriptive study which was conducted from October to December 2017 at the Tumor and Dermatosurgery outpatient Department of Dr. Mohammad Hoesin General Hospital Palembang. A total of 36 patients with skin tag who met the inclusion criteria were included in the study. Demographic data, body mass index (BMI), and serum lipid profile including triglycerides, total cholesterol, HDL and LDL cholesterol were measured. Abnormal serum lipid profile (83.3%) and obesity (61.1%) were observed. The mean of LDL and total cholesterol levels of skin tag patients were shown to be elevated, but not in triglycerides and HDL levels. Abnormal serum lipid profile in patients with skin tag may associated with metabolic syndrome.

1 INTRODUCTION

Skin tag commonly found on skin foldssuch as neck, axillae, eyelids, and inguinal (Thmas et al, 2012; Kutzner et al, 2016). Skin tag remains asymptomatic unless they become inflamed or irritated (Wali et al, 2016). The incidence of skin tag is common among adult population over 40 years old and increase at 70 years old (Tamega et al, 2010). The etiology of skin tag is still unknown (Wali et al, 2016). Several factors such as family history, pregnancy, impaired glucose metabolism, obesity, and friction were associated with skin tag (Tamega t al, 2016; Tosson et al, 2013). Skin tag may associated with metabolic syndrome (De et al, 2017). Recent studysuggested that the presence of skin tag is associated with abnormal serum lipid profile (Eldaiem, 2016; Idris et al, 2014). Abnormal serum lipid profile may be a sign of abnormal fat metabolism, which may increase adipose deposition and increase leptin production (Sari et al, 2010; Erkek et al, 2011). Leptin is a protein synthesized by adipose tissue. Elevatedserum leptin is associated with elevated fat mass. The mechanism of skin tag formation is through the activation of leptin receptor in the dermis and epidermis which stimulate the differentiation and proliferation of keratinocytes and fibroblast (Idris et al, 2014; Erkek et al, 2011; Jusuf et al, 2017). Several study suggested there is an association between serum lipid profile and skin tag, however other study were still different result (Eldaiem, 2016; Idris et al, 2014; Rasi et al, 2014). Hence, researcher are interested to analysed the serum lipid profile of patients with skin tag in Dr Mohammad Hoesin General Hospital Palembang.

2 METHODS

This is a descriptive study which was conducted from October to December 2017at the Tumor and Dermatosurgery outpatient Department of Dr Mohammad Hoesin General Hospital Palembang. The study was approved by the ethics committee. Sample study was obtained with consecutive sampling.The inclusion criteria was patient of age 26–70 years old with skin tag at any location who agree to participate in the study. Exclusion criteria was diagnosed patients with secondary dyslipidemia

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such as diabetes melitus, nephrotic syndrome, chronic renal insufficiency, liver disease, thyroid dysfunction and Cushing's disease; who received hormonal contraceptive pills, systemic corticosteroid, and anti-dyslipidemia; pregnant and lactating patients. A total of 37 patients with clinical diagnosis of skin tag were informed concent and lesion were obtained for histopathological examination.Thirty six patients whom histopathological diagnosis as skin tag were included.Demographic data were collected and blood were drawn to measure the serum lipid profile including triglyceride, total cholesterol,LDL cholesterol, and HDL cholesterol levels. Classification of patients' BMI based on International Association for The Study of Obesity WHO 2000, in which underweight <18.5 kg/m^2, normal 18.5–22.9 kg/m^2, at risk 23-24.9kg/m^2, obesity 125-29.9kg/m^2, and obesity II ≥30 kg/m^2 (WHO, 2006).

3 RESULTS

The majority age groups in this studywere late adult 30.6%. Female patientswere higherthan male patients with ratio3:1. Multiple skin tag lesions were noted in 25 patients (69.4%) and solitary lesion was noted in 11 patients (30.6%) (**Table 1**).

Table 1. Demographic and skin tag characteristic of patients.

Variable	**n (%)(n= 36)**
Age	
Early adult (26-35 years old)	10 (27.8)
Late adult (36-45 years old)	11 (30.6)
Early elderly (46-55 years old)	10 (27.8)
Late elderly (56-65 years old)	4 (11.1)
Very late elderly (>65 years old)	1 (2.8)
Gender	
Male	9 (25)
Female	27 (75)
Education	
Senior high school	8 (22.2)
Diploma-Doctor	34 (54.9)
Occupation	
Unemployment	5 (13.9)
Non-government/public	3 (8.3)
Government employee	23 (63.9)
Labor	5 (13.9)
Family history of skin tag	
Not present	23 (63.9)
Present	13 (36.1)
Body mass index	
Normal	7 (19.4)
At risk	7 (19.4)
Obesity 1	14 (38.9)
Obesity 2	8 (22.2)
Number ofskin tag	
Solitary	11 (30.6)
Multiple	25 (69.4)
Type ofskin tag	
Filiformis (± 2 mm of width and ±5 mm of length)	32 (88.9)
Large bag-like protuberances (≥ 1cm of length)	4 (11.1)

In this study,30 patientshad abnormal serum lipid profile (83.3%) dan 6 patientshad normal range of serum lipid profile(16.7%) (**Figure 1**). Obese patients were 61.1%, in which obesity 1 38.9% and obesity 2 22.2%. The mean number of skin tag was5.22±4.39. The mean serum lipid profile level in study patients as follows, triglyceride was 121.69±78 mg/dl; total cholesterol was 202.69±40.28 mg/dl; LDL cholesterol was 125.89±35.88 mg/dl; and HDL cholesterol was 51.97±11.28mg/dl (**Table 2**).

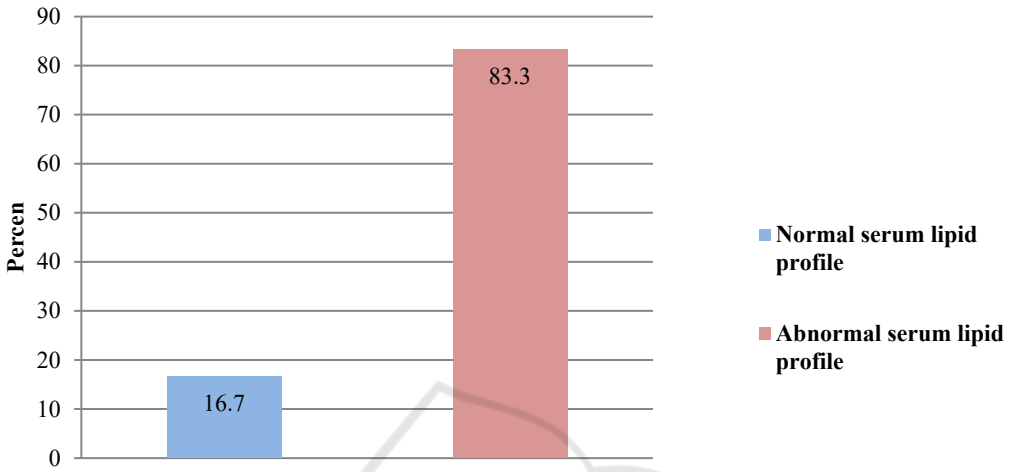

Figure 1. The distribution of abnormal serum lipid profile in patients.

Table2. The percentase of serum lipid profile in patients

Variable	N	%	Mean±SD
Triglyceride			121.69±78
Normal	28	77.8	
Borderline high	5	13.9	
High	3	8.3	
Total cholesterol			202.69±40.28
Normal	19	52.8	
Borderline high	10	27.8	
High	7	19.4	
HDL cholesterol			125.89±35.88
Low	23	63.9	
Normal	4	11.1	
High	9	25	
LDL cholesterol			51.97±11.28
Normal	8	22.2	
Near optimal	15	41.7	
Borderline high	5	13.9	
High	5	13.9	
Very high	3	8.3	

4 DISCUSSION

One of the most common benign fibrous lesions of the skin is skin tag. Although it remains asymptomatic but most patients are not aware that skin tag may be a sign of an abnormal serum lipid profile that may lead to metabolic syndrome (Maluki et al, 2016). In the present study we found that 83.3% patients had abnormal serum lipid profile and 61.1% obesity. Hence in this present study we

analysed the serum lipid profile was altered in patients with skin tags, mainly of LDL and total cholesterol levels. This result was also supported from a study conducted by Maluki AH and Gorpelioglu C et al (Maluki et al, 2019; Gorpelioglu et al, 2009). Abd Eldaiem et alfoundsignificant different serum lipid profile in 60 patients with skin tag in compare to the 60 control group (Eldaiem, 2016). Another study by Wali V et alalso supported a significant different serum lipid profile in 63 patients with skin tag in compare to the 60 control group (Wali et al, 2016).

According to a study by Jusuf NK et al, there is plausible mechanisms that explain pathogenesis of skin tags in elevated fat mass caused increased level of leptin. Abnormal serum lipid profile may cause increase fat mass.The concentration of leptin is correlated with fat mass, obesity individuals often had elevated levels of leptin. Leptin is a growth hormone that suggests active in the process of proliferation and differentiation keratinocytes and fibroblast (Jusuf et al, 2017). An in vivo study showed that leptin has an ability to induce proliferation of keratinocytes together with other growth factor (Erkek et al, 2011).

The limitationof this study, leptin level was not measured, the study was done in a single centre with small sample size population. Future studies with multi center and larger sample size population were needed to further support the association serum lipid profile with skin tag.

5 CONCLUSION

Abnormal serum lipid profile was found in almost all patients with skin tag, mainly of LDL and total cholesterol. Abnormal serum lipid profile in patients with skin tag may associated with metabolic syndrome. Life style modification of weight reduction and alteration of dietary habits should be encourage in patients with skin tag.

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REFERENCES

De, D., Biswas, M., Pal, D., Biswas, T., 2017. Can acrochordons be a marker of metabolic syndrome?. *JEMDS*, 6(56), pp. 4183-4187.

Eldaiem, R.A., 2016. Assessment of lipid profile among patient with skin tags in Khartoum State-Sudan. *EJBPS*, 3(8), pp. 45-48.

Erkek, E., Kisa, U., Bagci, Y., Sezikli, H., 2011. Leptin resistance and genetic predisposition as potential mechanisms in the development of skin tags. *Hong Kong Journal of Dermatology and Venereology* 19, pp. 108–114.

Gorpelioglu, C., Erdal, E., Ardicoglu, Y., Adam, B., Sarifakioglu, E., 2009. Serum leptin, atherogenic lipids and glucose levels in patients with skin tags. *Indian Journal of Dermatology* 54, pp. 20–22. doi:10.4103/0019-5154.48980.

Idris, S., Sunitha, S., 2014. Assessment of BMI, Serum Leptin Levels and Lipid Profile in Patients with Skin Tags. *Journal of clinical and diagnostic research : JCDR* 8, CC01-3. doi:10.7860/JCDR/2014/10350.4853.

Jusuf, N.K., Putra, I.B., Kartayana, J., 2017. The correlation between body mass index with the occurrence of skin tag. *Macedonian Journal of Medical Sciences* 5, pp. 271–274. doi:10.3889/oamjms.2017.061

Kutzner, H.H., Kamino, H., Reddy, V.B., Pui, J., 2018. Fibrous and fibrohistiocytic proliferations of the skin and tendons. In: Bolognia JL, Schaffer JV, Cerroni L, editors. *Dermatology*. 4th ed. New York: Elsevier Limited;. p.2068-2085.

Maluki, A.H., & Abdullah, A.A., 2016. Metabolic associations with skin tags. *International Journal of Dermatology Clinical Research*, 2(1), pp. 003-11.

Rasi, A., Faghihi, A., Rahmanzadeh, Y., Hassannejad, H., 2014. A comparison study of lipid profile levels between skin tags affected people and normal population in Tehran, Iran. *Advanced biomedical research* 3, pp. 109. doi:10.4103/2277-9175.129709.

Sari, R., Akman, A., Alpsoy, E., Balci, M.K., 2010. The metabolic profile in patients with skin tags. *Clinical and experimental medicine* 10, pp. 193–197. doi:10.1007/s10238-009-0086-5.

Tamega, A. de A., Aranha, A.M.P., Guiotoku, M.M., Miot, L.D.B., Miot, H.A., 2010. [Association between skin tags and insulin resistance]. *Anais brasileiros de dermatologia* 85, pp. 25–31. doi:10.1590/S0365-05962010000100003.

Thomas, V.D., Snavely, N.R., Lee, K.K., Swanson, N.A., 2012. Dermal hypertrophies and benign fibroblastic/myofibroblastic tumors. In: Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ, Wolff K, editors. *Fitzpatrick's Dermatology in General Medicine*. 8thed. New York: The McGraw-Hill Companies, Inc;. p.707-17.

Tosson, Z., Ibrahim, S.A., Kandil, A.H., Husam, M., 2013. Relationship between skin tags , leptin hormone and

metabolic disturbances. *Egyptian Dermatology Online Journal* 9, pp. 1–12.

Wali, Vinod V., Wali, Vishal V., 2016. Assessment of various biochemical parameters and BMI in patients with skin tags. *Journal of Clinical and Diagnostic Research* 10, BC09-BC11. doi:10.7860/JCDR/2016/15994.7062

World Health Organization Western Pacific Region. 2000. *The Asia-Pacific perspective: redefining obesity and its treatment*.