

Evaluation of Lipid profiles in psoriasis patients

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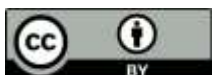
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Psoriasis, lipid profile, Cholesterol, VLDL.

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ABSTRACT

Psoriasis is a skin condition that causes flaky patches of skin which form scales normally appear on elbows, knees, scalp and lower back, also can appear anywhere on body. This study aims to evaluate the correlation between lipid profile variables with the psoriasis development within group subjects. The study included 310 patients, males and females aged (25-65) years. The patients were attending a dermatology consultant at Al-Yarmouk Teaching Hospital in Baghdad. Blood samples were collected by venipuncture from all individuals. Biolis 24i automated analyzer was used to estimate serum levels of Cholesterol, Triglyceride, HDL, LDL, and VLDL. The incidence, prevalence, and manifestation of skin psoriasis are similar between different sexes, there is overexpression of lipid profile related tests, as these variables could impact each other. High levels of Cholesterol, Triglyceride, HDL, LDL, and VLDL in psoriatic patients were recorded when compared with controls. However, it was found that considerable effect of the progression of psoriasis on the elevated lipid profile levels in such individuals. The incidence and prevalence of the disease similar in both sexes. However, all physiological levels of understudy variables were increased in patients with psoriasis, and this may play a major role in the disease development.

INTRODUCTION

Psoriasis is a chronic, an autoimmune illness marked by elevated, abnormal-looking skin patches. These spots are scaly, dry, irritating, and red, pink, or purple [1]. Psoriasis is generally thought to be a genetic disease that is triggered by environmental factors, that affects about 0.1–1.5% of the population worldwide [2]. The symptoms of psoriasis vary from person to person, lesions can range in size from a few flakes on the scalp or elbow to the entire body [1,2].

Psoriasis is an autoimmune disease that can start at any age, but most often develops in adults between 20 and 30 years old, and between 50 and 60 years old, it affects men and women equally [3]. The Psoriasis Area Severity Index (PASI) score is used to determine the severity and scope of psoriasis, which depends on intensity and area [4].

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Psoriasis is a multifactorial skin condition with complicated pathophysiology [5]. T cells, antigen-presenting cells (APCs), keratinocytes, Langerhans' cells, macrophages, natural killer cells, a variety of Th1 type cytokines, specific growth factors like vascular endothelial growth factor (VEGF), keratinocyte growth factor (KGF), and others have all been suggested to play a significant role in the pathogenesis. It has been theorized that the disease begins with the activation of T cells by an unidentified antigen, which causes activated T cells, inflammatory cells, and keratinocytes to secrete a variety of cytokines [6].

The detection of abnormalities in lipids such as cholesterol and TG, requires a series of blood tests called a lipid profile [7]. The data obtained from such tests could be used to reveal hereditary illness and estimate the risks of progressing a cardiovascular disease, or some pancreatitis kinds, and other diseases [8]. Lipid panels are typically ordered in conjunction with other panels during a physical exam, such as the basic metabolic panel (BMP) and complete blood count (CBC). Typical elements of the lipid profile are low-density-lipoprotein (LDL), high-density-lipoprotein (HDL), TG and total cholesterol [9].

MATERIALS AND METHODS

Study design and setting

The study included 310 patients, males and females aged (25-65) years. The patients were attending a dermatology consultant at Al-Yarmouk Teaching Hospital in Baghdad for the period from 1st –Sep.-2022 to 31st –Dec.-2022. Samples were collected from patients according to clinical diagnostic criteria based on pathological signs. 80 people were excluded from the patients because they had other inflammatory, or chronic diseases in addition to psoriasis. The final number of patients became 230 (112 males, 118 females). in addition to 40 (21 males, 19 females) control individuals, which were divided into three groups (Figure 1).

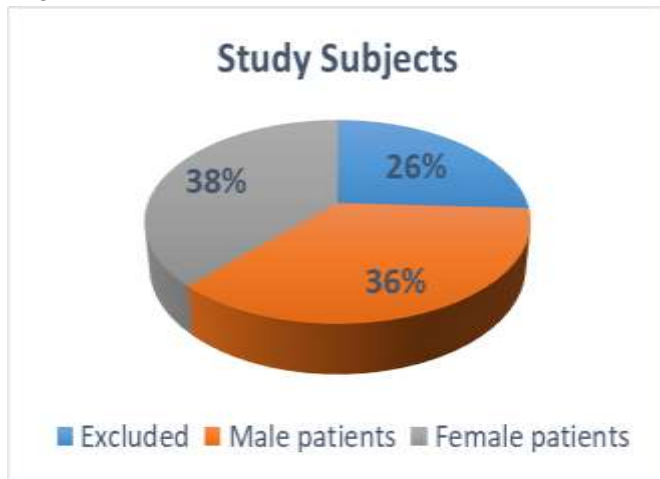


Figure 1: percentage distribution of study patients

Ethical consideration

The protocol of this study was approved by the Ethics Committee of the Ministry of Higher Education and Scientific Research – University Of Anbar. Consent was taken from each individual who participated in the study and the personal information of each patient and healthy volunteer was presented in a questionnaire form under the supervision of the consultant and after obtaining approval for obtaining samples from patients and controls.

Samples collection

Blood samples were collected by venipuncture (5) ml of blood was drawn using a disposable syringe from each individual. Thereafter, (5) ml was transferred into gel disposable tubes, the samples left at room

temperature (20-25°C) for clotting. The serum was separated by centrifugation for (5) min at 3000 (rpm). The separated serum was distributed equally into Eppendorf tubes and kept at -20°C until assayed [10].

The examination procedure employee the BioLis 24i technique, which is a small tabletop automated analyzer device, capable of processing 240 tests each hour. The device uses the basic design notion, such as a pneumatic reaction mixing system that varies from the conventional stirrer system. However, each assay can be implemented using the appropriate kit (Boeki, Japan), assay measures time was the same for all tests, about (15) minutes, and used for (TC, TG, HDL, LDL, and VLDL) [11].

Statistical analysis

All obtained results of the current study were subjected to various biometrical analyses such as student (t) test to testify the differences between means of examined variables, P value of ≤ 0.05 and ≤ 0.01 were considered to indicate statistical significance. Via applying statistical package for social science (SPSS) software program version 25.

RESULTS and DISCUSSION

The final number of patients became 230 (112 males, 118 females), in addition to 40 (21 males, 19 females) control as shown in figure (2).

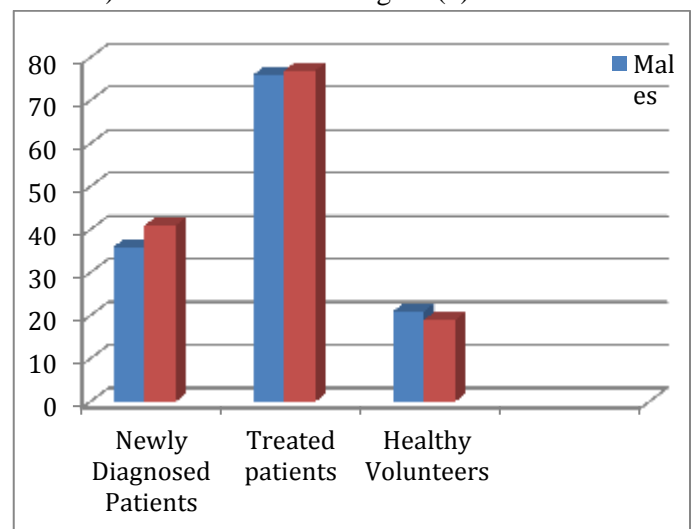


Figure (2): Distribution of sex among investigated Groups

Table (1) summaries the mean value \pm Standard deviation of all examined variables of female and male

patients compared with control sample subjected to this study.

Table 1: Mean ± SD of lipid profile(mg/dL) in patients and healthy control groups.

Lipid Profile	Group	Mean ± Standard deviation								
		Female			Male		Control			
		No	Mean	SD	No	Mean	SD	No	Mean	SD
Cholesterol		118	176.23	32.51	112	170.37	25.21	40	145.67	29.05
Triglyceride		118	186.06	107.7	112	221.83	106.1	40	120.97	22.18
HDL		118	38.626	6.23	112	38.732	7.299	40	37.2	5.23
LDL		118	111.88	36.01	112	120.40	31.95	40	95.78	14.14
VLDL		118	36.51	212	112	21.38	40	24.19	4.437	

t test analysis of these variable data was presented in Tables (2, 3, 4 and 5) where Table (2) shows the significant differences between patient females and males.

Table 2: t-test analysis of examined variables of female and male patients

Lipid profile	Group	Parameters				t-value	p-value	Result at p<0.05
		Female		Male				
Cholesterol		N	Mean	N	Mean			
118			176.23	112	170.37	1.51521	0.065552	Not significant

Lipid Profile	Group	Female			Male		Control		Significance		
		No	Mean	SD	No	Mean	SD	No		Mean	SD
Cholesterol		118	176.23	32.51	112	170.37	25.21	40	145.67	29.05	Significant
Triglyceride		118	186.06	107.7	112	221.83	106.1	40	120.97	22.18	Significant
HDL		118	38.626	6.23	112	38.732	7.299	40	37.2	5.23	Not significant
LDL		118	111.88	36.01	112	120.40	31.95	40	95.78	14.14	Not significant
VLDL		118	36.51	212	112	21.38	40	24.19	4.437		Significant

Table (3) explains significant differences between patient females and control whilst table (4) reveals t test analysis between patient males and control patients.

Table 3: t-test analysis of examined variables of female and control patients

Lipid profile	Group	Parameters				t-value	p-value	Result at p<0.05
		Female		Control				
		N	Mean	N	Mean			
Cholesterol		118	176.23	40	145.67	5.24116	0.00001	Significant
Triglyceride		118	186.06	40	120.97	3.77191	0.0001	Significant
HDL		118	38.63	40	37.2	1.29208	0.09912	Not significant
LDL		118	111.88	40	95.76	2.74239	0.003406	Significant

VLDL	118	36.58	40	24.19	3.64044	0.0000185	Significant
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Table 4: t-test analysis of examined variables of male and control patients

Group	Parameters	Male		Control		t-value	p-value	Result at $p < 0.05$
		N	Mean	N	Mean			
		Lipid profile						
Lipid profile	Cholesterol	112	170.37	40	145.67	5.07055	0.00001	Significant
	Triglycerid _e	112	221.83	40	120.97	5.92945	0.00001	Significant
	HDL	112	38.73	40	37.2	1.2123	0.113653	Not significant
	LDL	112	110.4	40	95.76	2.7851	0.003021	Significant
	VLDL	112	43.92	40	24.19	5.75261	0.00001	Significant

In the case of CT, the values in patient females were ranged from value 140.0 mg/dl - 256.0 mg/dl giving mean vale of 176.23 ± 32.51 mg/dl and from 117.0 - 217.0 in male patients giving a mean of 170.37 ± 52.21 mg/dl while it ranged in control from 121.0 mg/dl - 198.2 mg/dl having a mean of 145.67 ± 29.05 mg/dl. Analysis of t-test of these data reveals insignificant differences ($p > 0.05$) between female and male patients due to calculated t value of 1.51521 at probability 0.06555 (Table 2). But significant differences ($p < 0.05$) between patient female and control were found due to

calculated t value of 5.24116 at p value of 0.00001 (Table 3). Also, such similar significant differences ($p < 0.05$) between patient male and control were found as t value of 5.07055 at probability of 0.00001 (Table 4).

TG levels in patient female sample varied from 70.6 mg/dl - 412.0 mg/dl giving mean vale of 186.06 ± 107.7 mg/dl and from 99.0 mg/dl - 500.0 mg/dl in male sample giving a mean of 221.83 ± 106.1 mg/dl, while in control, it ranged from 90.7 mg/dl - 155.9 mg/dl having a mean of 120.97 ± 22.18 mg/dl. The t test of the differences between mean TG of patient female and male patients were found significant ($p < 0.05$) where calculated t value was -2.5257 at probability was 0.006113 (Table 2). Also, similar significant ($p < 0.05$) differences were detected between patient females and control as t value of 3.77191 at p of 0.0001 (Table 3). Again, such differences were found to be significant between patient males and control as calculated t value was 5.92945 at p of 0.00001 (Table 4).

Regarding HDL blood level, it was found that female level ranged from 26.0 mg/dl to 50.2 mg/dl with mean value 38.626 ± 6.23 mg/dl, but in male patients, these data were varied from minimum value of 25.6 mg/dl to maximum value of 53.0 mg/dl with mean value of 38.732 ± 7.299 mg/dl, whilst such values in control were found to range from 28.4 mg/dl - 48.5 mg/dl giving mean value of 37.2 ± 5.23 mg/dl. In case of t test for the differences between mean HDL of female and male patients, control female and male, patient females and control, and finally patient males and control were not significant ($p > 0.05$). Where t test of the differences between mean HDL of female and male patients were found insignificant ($p > 0.05$) where calculated t value was -0.11797 at probability was 0.453098 (Table 2). Again insignificant ($p > 0.05$) differences were found between patient females and control as t value was 1.29208 at p of 0.09912 (Table 3). Additionally, such differences were found again insignificant ($p > 0.05$) between patient males and control as calculated t value was 1.2123 at p of 0.11365 (Table 4).

The level of LDL in patient female varied from 37.0 mg/dl - 197.2 mg/dl giving mean vale of 111.88 ± 36.01 mg/dl, and from 45.8 mg/dl - 196.7 mg/dl in male sample giving a mean of 120.4 ± 31.95 mg/dl while in control sample, it ranged from 69.7 mg/dl to 115.1 mg/dl having a mean of 95.78 ± 14.14 mg/dl. Analysis of t test

of these data reveals insignificant differences ($p > 0.05$) between female and male patients due to calculated t value of 0.32603 at probability 0.372351 (Table 2). Similar significant differences ($p < 0.05$) between patient female and control were found due to calculated t value of 2.74239 at p value of 0.003406 (Table 3) and finally, such similar significant differences ($p < 0.05$) between patient male and control were found as t value of 2.7851 at probability of 0.003021 (Table 4).

In case of VLDL, the levels in patient females were ranged from 13.0 mg/dl - 82.4 mg/dl giving mean value of 36.51 ± 21.2 mg/dl, and from 17.1 mg/dl - 100.0 mg/dl in male patients giving a mean of 43.918 ± 21.38 mg/dl while, it ranged in control from 18.4 mg/dl - 31.18 mg/dl with mean of 24.19 ± 4.437 mg/dl. Analysis of t test of these data reveals significant differences ($p < 0.05$) between female and male patients due to calculated t value of -2.6009 at probability of 0.004953 (Table 2). Similar significant differences ($p < 0.05$) between female patient and control were found due to calculated t value of 3.64044 at p value of 0.00001 (Table 3). Also, significant differences ($p < 0.05$) between male patient and control were found as t value of 5.75261 at probability of 0.00001 (Table 4).

There is controversy around the relationship between dyslipidemia and psoriasis, with inconsistent results. Serum lipids level were inspected in several diverse groups of psoriatic patients with a comparison to controls. The results of blood lipids are greatly dependent on group matching (gender, age, and BMI) [9]. Within psoriatic patients, dyslipidemia and psoriasis are both risk factors for cardiovascular illness [12]. The obtained data from our study supposes that a relation between lipid and immunological abnormalities has been noticed. Consequently, this illness could also be referred to as immune-metabolic syndrome.

Since more than 60 years, [13] recorded elevated serum lipids level in psoriatic patients. Modern advances in the comprehension of inflammatory cell's role in psoriasis pathogenesis has shifted the clinical point of view on psoriasis from dermal disorder to systemic inflammatory approach, which might raise the propagation of additional comorbid conditions in such population [8]. Like psoriasis, metabolic syndrome (such as type II diabetes, obesity, hyper-triglyceridemic, and

HDL levels cholesterol.) is marked by an immunological activity increase in type one helper T cells, proposing that psoriasis may be linked with metabolic syndrome due to the shared of inflammatory pathways [14].

Lipoproteins metabolism is highly affected by genetic variations, and psoriatic patients differ in their dyslipidemia's expression in response to insulin resistance and / or obesity [15]. Psoriasis is related to abnormal plasma lipids metabolism, and diabetes is perhaps correlated to the modifications of insulin excretion and sensitivity [16]. Nevertheless, variations in the metabolism of lipids among psoriatic patients might be linked to numerous digestive system disorders. Yet, gastrointestinal system plays an important part in the procedure of lipids metabolism. Functional or structural disorders were discovered in almost all the digestive system parts or sections [17]. Other comorbid conditions that increase the risks of abnormal lipids metabolism might be found in such patients [18]. Additionally, anti-psoriatic drugs could also be in charge for lipid profile disorders in psoriasis patients due to the way they affect the blood circulating lipids. Just like infliximab that used as psoriasis therapy which recently reported as the main cause behind elevated TG levels in related patients [19].

Furthermore, Mallbris et al., 2006 detected if people of those with recently discovered psoriasis have aberrant lipid profiles when compared to the gender or age of control healthy peoples. They reported high levels of TC, LDL, TG, and HDL in the situations correspondent to control group, but statistically the variance was insignificant for HDL levels only [20]. In another study conducted by [21] it was reported that serum cholesterol and LDL levels were significantly above those of controls; Because of this, uniformity or consistency of the findings across studies is not evident. Several conflicting results were reported about the different parameters and lipid profiles that were well defined among psoriasis patients, with some research recording high levels, and some with normal levels across a few of the same measures. In current study, even so levels were increased of TG, TC, LDL, HDL, and VLDL among target patients, the variances were significant statistically when comparing to controls except HDL. However, extremely significant differences were revealed by the correlations between the various parameters in cases and controls [7]. This data of study

has clarified that the LDL high levels, TC, and TG, as well as the HDL and VLDL levels are obvious in the public, which finally explains that people are becoming progressively susceptible to many cardiovascular plus metabolic diseases.

CONCLUSION

Psoriasis is a very bothersome condition with a significant economic burden that frequently lasts a lifetime, and increases the risk of numerous chronic consequences of the patient. There are differences in incidence and prevalence between the sexes. Psoriasis patients suffer from a clear increase in the levels of TG, TC, HDL, LDL, and VLDL which have a major role in causing other related diseases such as atherosclerosis and/or cardiovascular diseases.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

- [1] Parisi, R.; Iskandar, I.Y.K.; Kontopantelis, E.; Augustin, M.; Griffiths, C.E.M.; Ashcroft, D.M. (2020). National, regional, and worldwide epidemiology of psoriasis: systematic analysis and modelling study. *BMJ*. 369:m1590. doi: 10.1136/bmj.m1590.
- [2] Ramessur, R.; Corbett, M.; Marshall, D.; Acencio, M.L.; Barbosa, I.A.; Dand, N.; Di Meglio, P.; Haddad, S.; Jensen, A.H.M.; Koopmann, W.; Mahil, S.K.; Ostaszewski, M.; Rahmatulla, S.; Rastrick, J.; Saklatvala, J.; Weidinger, S.; Wright, K.; Eyerich, K.; Ndlovu, M.; Barker, J.N.; Skov, L.; Conrad, C.; Smith, C.H. (2022). Biomarkers of disease progression in people with psoriasis: a scoping review. *British Journal of Dermatology*. 187(4): 481-493. doi.org/ 10.1111/ bjd.21627.
- [3] Ford, A.R.; Siegel, M.; Bagel, J.; Cordoro, K.M.; Garg, A.; Gottlieb, A. (2018). Dietary Recommendations for Adults with Psoriasis or Psoriatic Arthritis From the Medical Board of the National Psoriasis Foundation: A Systematic Review. *JAMA Dermatol* [Internet]. 154(8):934-950.
- [4] Papp, K.A.; Lebwohl, M.G.; Kircik, L.; Pariser, D.; Strober, B.; Krueger, G.; Higham, R.C. (2021). The PASI-HD improved precision in measuring disease severity in subjects with mild to moderate plaque psoriasis treated with roflumilast cream, a phosphodiesterase-4 inhibitor. *Journal of the American Academy of Dermatology*. 85(3): AB164.
- [5] Capon, F. (2017). The genetic basis of psoriasis. *International journal of molecular sciences*. 18(12): 25-26.
- [6] Elnabawi, Y.A.; Dey, A.K.; Goyal, A.; Groenendyk, J.W.; Chung, J.H.; Belur, A.D.; Mehta, N. N. (2019). Coronary artery plaque characteristics and treatment with biologic therapy in severe psoriasis: results from a prospective observational study. *Cardiovascular research*. 115(4): 721-728.
- [7] Sirin, M.C.; Korkmaz, S.; Erturan, I.; Filiz, B.; Aridogan, B.C.; Cetin, E.S.; Yildirim, M. (2020). Evaluation of monocyte to HDL cholesterol ratio and other inflammatory markers in patients with Psoriasis. *Anais brasileiros de dermatologia*. 95: 575-582. doi.org/ 10.53350 /pjmhs22164940.
- [8] Mora, S. (2016). Nonfasting for routine lipid testing: From evidence to action. *JAMA Intern Med*. 176 (7): 1005–1006.
- [9] Anderson, L.N.; Maguire, J.L.; Lebovic, G.; Hanley, A.J.; Hamilton, J.; Adeli, K. (2017). Duration of fasting, serum lipids, and metabolic profile in early childhood. *The Journal of Pediatrics*. 180: 47–52.
- [10] Raj, D.M.; Ravi, K.; Sankar, S. A. (2017). study on preanalytical errors in EDTA blood collected for cell counting. *J Evol Med Dent Sci*. 6(22): 1788-1794.
- [11] Sundstrom, K.; Lamin, H.; Dillner, J. (2021). Validation of the cobas 6800 (e411) human papillomavirus test in primary cervical screening. *PLoS One*. 16(2): e247291. doi: 10.1371/journal.pone.0247291.
- [12] Brazzelli, V.; Maffioli, P.; Bolcato, V.; Ciolfi, C.; D'Angelo, A.; Tinelli, C.; Derosa, G. (2021).

- Psoriasis and diabetes, a dangerous association: evaluation of insulin resistance, lipid abnormalities, and cardiovascular risk biomarkers. *Frontiers in Medicine*. 8: 605-610.
- [13] Lea, W.A.; Cornish, H.H.; Block W.D. (1958). Studies on serum lipids, proteins, and lipoproteins in psoriasis. *J Invest Dermatol*. 30(4):181–185.
- [14] Coban, M.; Tasli, L.; Turgut, S.; Özkan, S.; Ata, M.T.; Akin, F. (2016). Association of adipokines, insulin resistance, hypertension and dyslipidemia in patients with psoriasis vulgaris. *Annals of dermatology*. 28(1): 74-79. doi.org/10.5021/ad.2016.28.1.74.
- [15] Corbetta, S.; Angioni, R.; Cattaneo, A.; Beck-Peccoz, P.; Spada, A. (2006). Effects of retinoid therapy on insulin sensitivity, lipid profile and circulating adipocytokines. *Eur J Endocrinol*. 154(1):83-86. doi: 10.1530/eje.1.02057.PMID: 16381995.
- [16] Nowowiejska, J.; Baran, A.; Flisiak, I. (2023). Lipid Alterations and Metabolism Disturbances in Selected Inflammatory Skin Diseases. *Int J Mol Sci*. 24(8):7053. doi: 10.3390/ijms24087053.
- [17] Pietrzak, A.; Lecewicz-Toruń, B.; Kadziela-Wypyska, G. (1998). Changes in the digestive system in patients suffering from psoriasis. *Ann Univ Mariae Curie Sklodowska Med*. 53:187–194.
- [18] Sachdev, S.S.; Jamil, A.; Gunabalasingam, P.; Safdar, N.A. (2022). The Effects of Acitretin on Insulin Resistance, Glucose Metabolism, and Lipid Levels in Patients with Psoriasis. *Indian J Dermatol*. 67(4): 349-354. doi: 10.4103/ijd.ijd-328-21.
- [19] Castro, K.R.; Aikawa, N.E.; Saad, C.G. (2011). Infliximab induces increase in triglyceride levels in psoriatic arthritis patients. *Clin Dev Immunol*. 2011:352686.
- [20] Mallbris, L.; Granath, F.; Hamsten, A.; Stahle, M. (2006). Psoriasis is associated with lipid abnormalities at the onset of skin disease. *J Am Acad Dermatol*. 54(4):614–621.
- [21] Piskin, S.; Gurkok, F.; Ekuklu, G.; Senol, M. (2003). Serum lipid levels in psoriasis. *Yonsei Med J*. 44(1):24–26.

تقدير مستويات صورة الدهون في مرضى الصدفية

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الخلاصة:

الصدفية هي حالة جلدية تتسبب في ظهور بقع قشرية من الجلد تظهر عادة على المرفقين والركبتين وفروة الرأس وأسفل الظهر، ولكن يمكن أن تظهر في أي مكان على الجسم. تهدف الدراسة إلى تقييم العلاقة بين متغيرات صورة الدهون مع تطور الصدفية ضمن المجموعة المستهدفة. اشتملت الدراسة على 310 فرداً من ذكور وإناث تتراوح أعمارهم (25-65) سنة. كان المرضى من مراجعي العيادة الاستشارية للأمراض الجلدية في مستشفى اليرموك التعليمي في بغداد. تم جمع عينات الدم عن طريق الوريد من جميع الأفراد. تم استخدام المحلل الآلي Biolis 24i لتقدير مستويات مصلى الكوليسترول، الدهون الثلاثية، HDL، LDL، و VLDL. إن حدوث وانتشار ومظاهر الصدفية في الجلد غير متشابهة بين الجنسين في الصدفية، هناك إفراط في التعبير عن الاختبارات المتعلقة بصورة الدهون، حيث يمكن أن تؤثر هذه المتغيرات على بعضها البعض. كما تم تسجيل مستويات عالية من الكوليسترول، الدهون الثلاثية، HDL، LDL، و VLDL في مرضى الصدفية مقارنة مع أشخاص السيطرة الأصحاء. ومع ذلك، فقد وجد أن تأثيراً كبيراً لتطور الصدفية على المستويات المرتفعة من صورة الدهون في هؤلاء الأفراد. حدوث وانتشار المرض يختلف في كلا الجنسين. ومع ذلك، تم تأشير زيادة لجميع المستويات الفسيولوجية للمتغيرات المدروسة في مرضى الصدفية، وقد يلعب هذا دوراً رئيسياً في تطور المرض.

الكلمات المفتاحية: الصدفية، الدهون، الكوليسترول، VLDL.