

# Diabetes Mellitus Patients Are More Prone To Planter Warts

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## الخلاصة:

الهدف: تهدف الدراسة إلى أن مرضى السكري هم أكثر عرضة للإصابة بالآليل الغراسية. المنهجية: أجريت دراسة وصفية للمرضى السكري الأكثر عرضة للإصابة بالآليل الغراسية، حيث تم جمع البيانات للمدة من الأول من شهر كانون ثاني 2011 إلى نهاية شهر آب 2011، من مرضى السكري في مستشفى بغداد التعليمي-استشارية الجلدية، شملت عينة البحث 100 مريض، اختيروا بطريقة غرضية (غير عشوائية) وحسب مواصفات العينة من عمر 15 سنة إلى 65 سنة. النتائج: أظهرت الدراسة إن معدل العمر (38.6) سنة، وإن أغلب العينة من الرجال المتزوجين، من السكان الحضر، يتمتعون بتاريخ عائلي جيد، افتقار الثقافة الصحية والتغذية من خلال عدم السيطرة على الغذاء. أثبتت نتائج الدراسة، وجود علاقة جيدة من ناحية الإصابة بالآليل الغراسية وارتفاع نسبة السكر في الدم.

## Abstract:

**Objective:** The aim of this study was to determine the diabetes mellitus patients more prone to planter warts.

**Methodology:** A purposive (non-probability) sample of (100) patients, from (15-60) years old, who were selected the patients from Baghdad Teaching Hospital-Dermatology Consultation, has been chosen. The study indicated that the mean of age was (38.6) year, and the majority of them were male, marriage, who lived in urban area, have positive past history for diabetes mellitus, uncontrolled diabetes mellitus. All the patients, diagnosis by laboratory test.

A descriptive study carried out from January 2011 to the end of August 2011.

A cording to the sample descriptive, form was constructed for the purpose of the study.

Data were analyzed through descriptive statistical approach (frequency and percentage) and, lycart scale analysis that include, t-test, and stepwise multiple regression.

## Results:

The result of the study confirmed that the mean of age was (38.6) year, and the majority of the sample were male, marriage, who lived in urban area, was within positive past history, previous disease, dietary pattern, and medication intake for diabetes mellitus patients with planter warts, uncontrolled diabetes mellitus. All the patients, diagnosis by laboratory test. The study shows that there is good relationship between diabetes mellitus patients and planter warts.

## Introduction:

Diabetes is a chronic (long term) condition marked by abnormally high levels of sugar in the blood. People with diabetes either do not produce enough insulin a hormone that is needed to convert sugar, starches and other food into energy needed for daily life or cannot use the insulin that their bodies produce. As a result, glucose builds up in the bloodstream. If left untreated or uncontrol treated, diabetes can lead to complications such as blindness, kidney disease, nerve disease, skin problem, heart disease, and stroke.

Planter warts are one of complication occur for diabetes mellitus patients on the sole of the foot due to an infection of the Human Papilloma Virus (HPV). It has been also seen that those with diabetes are more likely to develop problem of plantar warts. A weakened immune system that then caused by diabetes reportedly enables the HPV virus to attack the human body (MFMER., 2011).

Skin problems linked to diabetes and insulin resistance. This is a skin problem that results in the darkening and thickening of certain areas of the skin especially in the skin folds. Most often the condition, which typically looks like a small wart, appears

on the sides or back of the neck, the armpits, under the breast, and groin. Occasionally the top of the knuckles will have a particularly unusual appearance. treated diabetes, may improve the skin condition. skin problems usually precedes diabetes and is considered to be a marker for the disease. It is thought that this health condition is a skin manifestation of insulin resistance. (Morgan J., 2011).

The people who most commonly get warts are children, young adults and women and affect between 7 to 10% of the population. There are nearly 60 different kinds of HPV which can cause warts and each type of HPV prefers a certain part of the human body. There are some HPV's which will produce warts on a person's skin whilst there are others which will produce warts inside your mouth and others which will produce warts on the genital and rectal areas of a person's body.

Also people who suffer with HPV will differ in their sensitivity to the virus and some people may find that they get warts over and over again, whilst others will only get them on odd occasions. Unfortunately for those with damaged skin the HPV is able to penetrate the body more easily. Plus people who suffer with a weakened immune system as result of long time uncontrolled diabetes mellitus are especially sensitive to HPV and will suffer with wart infections (Winer R. et al., 2010).

**Key words:** planter warts and diabetes mellitus.

### **Methodology:**

A descriptive study was conducted in order to assess the diabetes mellitus patients more prone to planter warts, through the application of an assessment approach for the period from January 2011 to the end of August 2011.

Non-probability sampling was performed. A purposive sample of (100) subjects relative diabetes mellitus patients with planter warts, from Baghdad Teaching Hospital-Dermatology Consultation. These relative persons represent those who are between the ages of (15-60) years old. A questionnaire was constructed for the purpose of the study. It was composed of (2) major parts, and overall items, which were included in the questionnaire, were (32) items. Part I includes the demographic data of age, gender, marital status, and residential area, Part II the physical problems which were related to genetic susceptibility, previous disease, dietary pattern, and medication intake, for diabetes mellitus patients with planter warts.

Reliability was determined through a pilot study which was carried out during the period of January 2011 to the end of June 2011. The questionnaire and structured interview technique were used as mean of data collection. The data were analyzed through the application of the descriptive statistical data analysis approach (Frequency and Percentage) and the inferential statistical data analysis approach Chi-square, Person correlation coefficient.

### **Results:**

Table (1): Distribution of the study sample (100) by their demographic characteristics age, gender, marital status, and residential area. The table also shows the association between demographic data include (age, gender, marital status, residential area), and planter warts.

No.	Age	Frequency	Percentile	X <sup>2</sup> obs.	X <sup>2</sup> crit.	df	P.valu
1-	15-24	13	13	29.800	9.487	4	< 0.050
2-	25-34	20	20				
3-	35-44	41	41				
4-	45-54	15	15				
5-	55-65	11	11				
Total		100	100.0				
No.	Gender	F	%	19.360	3.841	1	< 0.050
1-	Male	72	72				
2-	Female	28	28				
Total		100	100.0				
No.	Marital status	F	%	161.500	9.487	4	< 0.050
1-	Married	68	68				
2-	Single	24	24				
3-	Widowed	5	5				
4-	Divorced	1	1				
5-	Separated	2	2				
Total		100	100.0				
No.	Residential area	F	%	11.560	3.841	1	< 0.050
1-	Rural	33	33				
2-	Urban	67	67				
Total		100	100.0				

\* The mean of age is (38.6).

The distribution of the matched demographic characteristics out of this table indicates that the majority of the groups is (15-65) years old who are (41%) of the groups. Most of them were male (72%). It indicated that most of them is married which (62%) of the study. This table shows that the distribution of residential area, living at urban areas who were (67%),

The table shows that there was high significant association between age, gender, marital status, and planter warts, and significant association between age, gender, and planter warts.

Table (2): Distribution of the cases by their genetic susceptibility (family history, and the previous disease) for planter warts.

No.	Genetic susceptibility (Family history)	Yes		No		Total
		F	%	F	%	
1-	Hypertension.	55	33.3	45	13.4	100
2-	Diabetes mellitus.	44	26.6	56	16.7	100
3-	Angina pectoris.	30	18.1	70	20.8	100
4-	Myocardial Infarction.	34	20.6	66	19.7	100
5-	Cerebrovascular accident	2	1.2	98	29.2	100
Total		165	100	335	100	500
X <sup>2</sup> obs. = 11.560      df = 4      X <sup>2</sup> crit. = 9.487      P < 0.050						
No.	Previous disease	Yes		No		Total
		F	%	F	%	
1-	Hypertension.	34	60.7	66	19.1	100
2-	Atherosclerosis.	8	14.2	92	26.7	100
3-	Angina pectoris.	9	16.0	91	26.4	100
4-	Myocardial infraction.	5	8.9	95	27.6	100
Total		56	100	344	100	400
X <sup>2</sup> obs. = 46.240      df = 3      X <sup>2</sup> crit. = 7.814      P < 0.050						

This table shows the finding out of this table presented that the higher number of Hypertension. was accounted (33.3%), for genetic susceptibility for planter warts.

The table shows that the previous disease for the patients who have hypertension were accounted (60.7%) for the groups.

The table shows that there was significant association between genetic susceptibility, and planter warts, and significant association between previous disease, and planter warts.

**Table (3): Mean of scores for items of the dietary pattern, and the association between dietary pattern and planter warts.**

No.	Items	3	2	1	M.S.	Sig.
	I prefer to having	Always	Some time	Never		
1-	rich sweat.	87	10	3	2.84	H.S.
2-	rich fatty meal.	79	13	8	2.71	H.S.
3-	pastry.	80	14	6	2.74	H.S.
4-	to drink beverage (coca cola).	89	6	5	2.84	H.S.
5-	to drink juice.	75	15	10	2.65	H.S.
6-	to eat broccoli, garlic, onions, ginger, cauliflower, green beans	22	20	58	1.64	S.
Total		432	78	90	2.57	H.S.
$X^2$ obs. = 67.340      df = 5 $X^2$ crit. = 11.070      P < 0.050						

This table shows that the mean of scores is highly significant on all items excepted (6) was significant. The table also shows the association between dietary pattern and planter warts.

**Table (4): Distribution of the cases by their medication intake.**

No.	Medication intake	Yes	%	No	%	Total
1-	Insulin and glucophage.	40	51.2	60	27.0	100
2-	Dianil tablets.	10	12.8	90	40.5	100
3-	Glucophage tablets.	28	35.8	72	32.4	100
Total		78	100	222	100	300
$X^2$ obs. = 23.040      df = 2 $X^2$ crit. = 5.991      P < 0.050						

This table indicates that the majority of the groups (51.2%) was intake medication such as insulin and glucophage, of the cases.

The table reveals that there is significant association between medication and planter warts.



Table (5): Pearson correlation between age, gender, residual area, marital status, genetic susceptibility, previous diseases, dietary pattern and planter warts.

Variable		Gender	Marital status	Residual area	Genetic susceptibility	Previous diseases	Dietary pattern
Age	Co.	.771**	.730**	.802**	.802**	.659**	.794**
	Sig.	C1 .001	C2 .000	C3 .000	C4 .001	C5 .347	C6 .000
	N.	100	100	100	100	100	100
Marital status	Co.	.786**		.392**	.392**	.244**	.836**
	Sig.	C7 .000	_____	C8 .185	C9 .347	C10 .347	C11 .000
	N.	100		100	100	100	100
Residual area	Co.	.438**			.622**	.409**	.845**
	Sig.	C12 .014	_____	_____	C13 .000	C14 .000	C15 .000
	N.	100			200	100	100
Genetic susceptibility	Co.	.438**				.409**	.845**
	Sig.	C16 .000	_____	_____	_____	C17 .000	C18 .000
	N.	100				100	100
Previous diseases	Co.	.272**	_____				.736*
	Sig.	C19 .000		_____	_____	_____	C20 .000
	N.	100					100
Dietary pattern	Co.	.934**	_____				
	Sig.	C21 .000		_____	_____	_____	_____
	N.	100					
Medication	Co.	.370**	.331**	.845**	.845**	.736**	.345**
	Sig.	C22 .000	C23 .000	C24 .000	C25 .000	C26 .000	C27 .000
	N.	100	100	100	100	100	100

C = Cell.

Co. = Correlation coefficient.

Sig. = Significant (2- tailed).

N. = Number of sample.

This table shows that the relationship in the all of the cells.

(C1 It means relationship between gender and age, C6 It means relationship between age and dietary pattern ...etc.).

[\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed)]

## Discussion:

Table (1) indicated the findings of the study which revealed that age range between (15-65) years old, and that the age of patients with planter warts ranged between (35-44) years old who are (41%) of the groups. Most of them were male (72%). The table also indicated that most of them are married which (68%) of the study, and the category related with residential area, living at urban areas who were (67%), the mean of the age was (38.6) years.

The table indicated that there was a significant association between age, gender, marital status, residential area, and planter warts.

Planter warts are familiar to all age's groups. Autoimmunity is often caused by a lack of germ development of a target body and as such the immune response acts against its own cells and tissues. Prominent examples include diabetes mellitus type 1 (IDDM), or type II (NDDM), it is appear frequently in persons often come into contact with a wart virus in a locker room, swimming pool area, or by walking barefooted on dirty surfaces. The blood vessels feeding them are the black dots that are visible on the warts. These warts can grow to an inch or more in circumference and spread into clusters of several warts. (Kilkenny M., et al., 2011).

Planter warts occur on the sole of the foot due to an infection of the HPV or the Human Papilloma virus. It has been seen that those with diabetes are more likely to develop planter warts. A weakened immune system caused by diabetes reportedly enables the HPV virus to attack the human body. When someone has diabetes, the sores will heal slowly, and this means that it will take longer to cure planter warts, also Planter warts occur people suffering of diabetes are known as owners of a weakened immune system, it occurs in both sexes, causing them a lot of inconveniences (Gavillon N., et al., 2010).

Table (2) shows that the genetic factor for planter warts, most of the groups were relative with hypertension (33.3%). The table indicated that there was a significant association between genetic factor and planter warts.

The table also shows that the category related with previous disease for the patients who have hypertension were accounted (60.7%) for the groups.

The table shows that there was significant association between genetic susceptibility, previous disease, and planter warts.

Diabetes mellitus is definitely hereditary, but it is compounded in future generations due to other problems such as high blood pressure (hypertension), obesity. People can also get a defective mechanism from their preceding generations due to which the beta cells of the islets of Langerhans can be impaired in their functions (Kreimer, A., et al., 2010).

People with diabetes mellitus are prone to complications from planter warts related to the development of sores or ulceration and the poor healing potential associated with diabetes (Morgan J., 2011).

Table (3) shows that the mean of scores for dietary patterns is highly significant on all items excepted (6) was significant. The table also shows the association between dietary pattern and planter warts.

The patients with Planter Warts, the nutritious diet should consist of essential vitamins and minerals so as to strengthen the immune system. Thus, it should include more fresh fruits, whole grains and vegetables, particularly green vegetables ( Yong M., et al., 2010).

Table (4) reported that the majority of the groups (51.9%) was intake medication such as insulin and glucophage, for the cases.



The table reveals that there is significant association between medication and planter warts.

People with uncontrolled diabetes and under antidiabetic medication can go into 'diabetic complication' such as plantar warts which are more likely to appear on the feet of diabetic people with sweaty skin. They need to treat these conditions as early as possible, to prevent these problems from becoming too serious. The complication caused by uncontrolled diabetes often happens in people whose blood sugar has been out of control for years. It is necessary for the family members to recognize the signs and symptoms of diabetes so as to assist the diabetic patient (Winer R. et al., 2010).

Table (5) indicated that there was strong positive relationship between age and gender ( $r = .771$ ,  $p = 0.01$ ), Marital status ( $r = .730$ ,  $p = 0.01$ ), residential area ( $r = .802$ ,  $p = 0.01$ ), genetic susceptibility ( $r = .802$ ,  $p = 0.01$ ), previous disease ( $r = .659$ ,  $p = 0.01$ ), dietary pattern ( $r = .794$ ,  $p = 0.01$ ). Marital status and gender ( $r = .786$ ,  $p = 0.01$ ), dietary pattern ( $r = .836$ ,  $p = 0.01$ ). Residential area and dietary pattern ( $r = .845$ ,  $p = 0.01$ ). Previous disease and dietary pattern ( $r = .736$ ,  $p = 0.01$ ). Dietary pattern and age ( $r = .934$ ,  $p = 0.01$ ). Medication and residential area ( $r = .845$ ,  $p = 0.01$ ), genetic susceptibility ( $r = .845$ ,  $p = 0.01$ ), previous disease ( $r = .836$ ,  $p = 0.01$ )

The table also indicated that there was positive relationship between marital status and residential area ( $r = .392$ ,  $p = 0.01$ ), genetic susceptibility ( $r = .392$ ,  $p = 0.01$ ), previous disease ( $r = .244$ ,  $p = 0.01$ ). Residential area and gender ( $r = .438$ ,  $p = 0.01$ ), previous disease ( $r = .409$ ,  $p = 0.01$ ). Genetic susceptibility and gender ( $r = .438$ ,  $p = 0.01$ ), previous disease ( $r = .409$ ,  $p = 0.01$ ). Previous disease and gender ( $r = .272$ ,  $p = 0.01$ ). Medication and gender ( $r = .370$ ,  $p = 0.01$ ), marital status ( $r = .331$ ,  $p = 0.01$ ), dietary pattern ( $r = .345$ ,  $p = 0.01$ ).

Autoimmunity is often caused by a lack of germ development of a target body and as such the immune response acts against its own cells and tissues. Prominent examples include diabetes mellitus type I (IDDM) and type II (NDDM) (MFMER., 2011).

Planter warts occur on the sole of the foot due to an infection of the HPV or the human papilloma virus. It has been seen that those with diabetes are more likely to develop plantar warts. A weakened immune system caused by diabetes reportedly enables the HPV virus to attack the human body. When someone has diabetes, the sores will heal slowly, and this means that it will take longer to cure plantar warts (Kilkenny M., et al., 2011).

Through clinical practice, it is often perceived that patients with diabetes are more likely to suffer from severe and recalcitrant warts. This study was set up to investigate if planter and genital warts were more common in patients with diabetes and to determine if patients with diabetes and planter, genital warts required more treatment than those without diabetes. Only female patients with diabetes and planter, genital warts were investigated and were compared to the non-diabetic population. Results suggested that patients with diabetes had more extensive warts and recurrences (Yong M., et al., 2010).

Despite of diabetes patients received treatment that is not prevent to appear the complications for uncontrolled diabetes patients to dietary control. The study shows that there is a good relationship between diabetes mellitus patients and planter warts (Researcher).

The result agreement with Kilkenny M., 2011, said that the people suffering of diabetes are known as owners of a weakened immune system, causing them a lot of inconveniences, such as planter warts.

The result conform with Schiller J., 2011, said that the patients attained diabetes complication more likely candidate to planter warts as result of immunity system defect for uncontrolled diabetes patients.

### **Recommendations:**

Based on the previously listed conclusions, the researcher recommends that:

- 1- The study recommended the need to pursue food and metabolic process through control diet programmer to avoid the development of the situation and to avoid complications.
- 2- The periodic inspection of the programmers allocated sugar according to avoid injury or disease, exacerbation of reduction.
- 3- Avoid direct contact and wash your hands carefully after touching your warts.
- 4- Keep your feet clean and dry by change your shoes and socks daily.
- 5- Don't go barefoot in public areas.
- 6- Don't pick at warts, Picking may spread the virus.
- 7- Booklet bears catalysts which cause injury.
- 8- Increase research project in this field of diabetes mellitus patients more prone to planter warts.

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