

Diabetic Mellitus and it's complications in Duhok city/ IRAQ

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Abstract

This study was carried out to provide further information on the patients with diabetic mellitus and any implications for the prevention of what is a life-threatening disorder.

Three hundred and five diabetic mellitus patients from diabetic centre of Duhok city and other places, were used:- (137) males & (168) females for the period from December-2010 to February-2011. We studied the relationship between genders and complications of diabetic mellitus. The study showed no significant differences ($p>0.05$) between heart disease, hypertension, neuropathy, nephropathy, retinopathy, stroke, foot complication, hearing problems, and gender, on the other hand, a significant ($p \leq 0.05$) relationship between skin & mouth condition, hyperlipidemia and gender. We conclude that the females were more than males with the risk of the dangerous of diabetic mellitus complications in Duhok city/ IRAQ

Introduction

Diabetes mellitus is a complex metabolic disease caused by a variable interaction between hereditary and environmental factors. The clinical syndrome is defined by hyperglycemia, microvascular abnormalities (retinal and renal) and neuropathy¹ Its main features are abnormal insulin secretion, high levels of blood glucose and a variety of complications such as nephropathy, retinopathy, neuropathy and arteriosclerosis².

Prolonged high blood glucose causes glucose absorption, which leads to changes in the shape of the lenses of the eyes, resulting in vision changes³.

Stroke is defined as rapidly developing symptoms and/or signs of focal and at times global loss of cerebral function lasting for 24 hrs

or more with no apparent cause other than that of vascular origin⁴. Stroke makes a considerable contribution to morbidity and mortality and is one of the top four causes of death worldwide⁵.

Skin problems are common in people with diabetes. High levels of glucose in the blood provide an excellent breeding ground for bacteria and fungi, and can reduce the body's ability to heal itself⁶. Diabetic mellitus disease can affect any organ such as the skin². Skin lesions of diabetic mellitus can be classified in four categories: skin manifestations with weak or strong association with diabetes including necrobiosis lipoidica, diabetic dermopathy, diabetic bulla, cutaneous manifestations due to diabetic complications such as microangiopathy, macroangiopathy and neuropathy, skin lesions



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due to treatment of diabetic mellitus and finally, infections (bacterial, fungal),7.

Neuropathies in diabetic mellitus patients lead to numbness and sometimes pain and weakness in the hands, arms, feet, and legs. Problems may also occur in every organ system, including the digestive tract, heart, and sex organs,6.

Diabetes doubles the risk of vascular problems, including cardiovascular disease ,depending on: age, gender, and having a family history of heart disease,8.

The aim of this study was to determine the effect of diabetes mellitus complications in people of Duhok city\ IRAQ ,and investigating the independent association of each of these clinical characteristics with parasympathetic dysfunction.

Patients and Methods:

It is a descriptive statistical study. Data collected from Diabetic Mellitus Centre in Dohuk city /IRAQ and other places. We started filling out the data from December -2010 to Fabrewary-2011. Data collection was obtained through filling the researcher's questionnaire considering the followings :- Gender and heart disease, Hypertension, Neuropathy, Nephropathy, Retinopathy, Hyperlipidemia, stroke, Skin & mouth condition, Hearing problems, & Foot complication. General physical examination and systemic evaluation were carried out; patients were also examining for other diabetic systemic complications. We were able to obtain the required data of 305, (137) male & (168) female diabetic mellitus patients. Statistical analysis for the obtained data was done by using SPSS(14.0) for windows .The level ($p < 0.05$) was taken as the cutoff value for significance.

The Results:

The results showed that the incidence of diabetic mellitus disease among males are lower than female in Duhok city,as in figure 1.

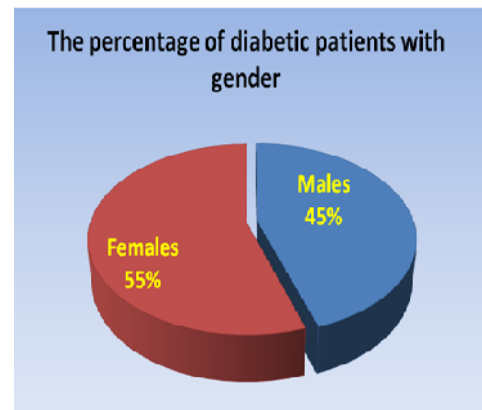


Figure 1/The percentage of diabetic patients with gender. Significant differences ($p < 0.05$).

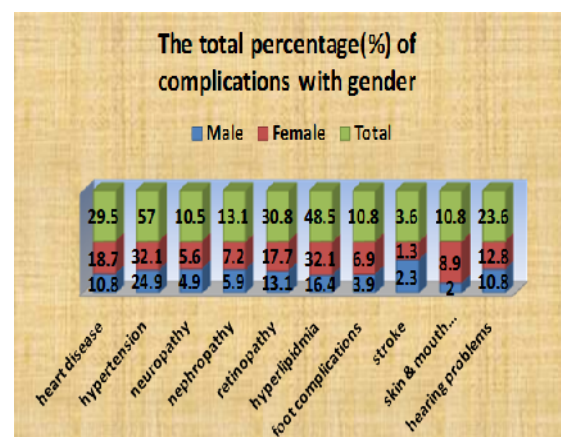


Figure 2/ The comparisons between the total (%) and gender showed no significant differences ($p > 0.05$), and the highest (%) was in hypertension and hyperlipidmia, then the retinopathy, heart disease and hearing problems. The lowest (%) was in stroke. Also this figure showed the comparisons between male and female with each disease, the

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significant differences ($p < 0.05$) were in hyperlipidemia and skin & mouth condition only.

The table below showed the distribution of gender with diseases .

Diseases		Male		Female		Total	
		No.	%	No.	%	No.	%
Heart disease	No	104	34.1	111	36.4	215	70.5
	Yes	33	10.8	57	18.7	90	29.5
Hypertension	No	61	20	70	23	131	43
	Yes	76	24.9	98	32.1	171	57
Neuropathy	No	122	40	151	49.5	273	89.5
	Yes	15	4.9	17	5.6	32	10.5
Nephropathy	No	119	39	146	47.9	265	86.9
	Yes	8	2.6	22	7.2	30	10.1
Retinopathy	No	97	31.8	114	37.4	211	69.2
	Yes	40	13.1	54	17.7	94	30.8
Hyperlipidemia (*)	No	87	28.5	70	23	157	51.5
	Yes	50	16.4	98	32.1	148	48.5
Foot complication	No	125	41	147	48.2	272	89.2
	Yes	12	3.9	21	6.9	33	10.8
Stroke	No	130	42.6	164	53.8	294	96.4
	Yes	7	2.3	4	1.3	11	3.6
Skin & Mouth condition (*)	No	131	43	141	46.2	272	89.2
	Yes	6	2	27	8.9	33	10.8
Hearing problems	No	104	34.1	126	42.3	233	76.4
	Yes	33	10.8	39	12.8	72	23.6

(*) mean a significant differences ($p < 0.05$).

Discussion:

Over the last few decades the prevalence of diabetes has reached epidemic proportions in western societies and is even higher in developing countries,9-11. The World Health Organization (WHO) has estimated that the global prevalence of diabetes will increase from 2.8% in 2000 to 4.4% by 2030,12. The present study indicates that the event of diabetic mellitus in people of Duhok is with risk of complications especially for women.

This study showed that heart disease and hypertension has no signification but females were more than males, this agree with 13 who found that heart disease and diabetes patient were in female higher than male ,but disagree with,4 hypertension were higher in men than female (37% vs 27%). 14 explain that hypertension is one major risk factor for atherosclerosis. The atherosclerotic vessel is more prone to thrombosis and rupture. Also 15 explain that vascular problems that occur as a result of diabetes are made worse when blood pressure is elevated from other sources such as poor diet or lack of exercise.

The current study results showed no signification in neuropathy with diabetic patient ,females were more than males, this disagree with20 they found that male are higher neuropathy than female (22.8% vs 14.3%) . 21 explain that researchers are studying how prolonged exposure to high blood glucose causes nerve damage. Nerve damage is likely due to a combination of factors: metabolic factors, such as high blood glucose, long duration of diabetes, abnormal blood fat levels, and possibly low levels of insulin .neurovascular factors, leading to damage to the blood vessels that carry oxygen and nutrients to nerves .autoimmune factors that cause inflammation in nerves.

The present study showed that nephropathy have no signification with gender, females were more than males , this disagree with 20 showed that male were higher nephropathy than female (25.6% vs 17.9%). 22 They have found that high blood pressure and high levels of blood glucose increase the risk that a person with diabetes will progress to kidney failure

This results showed no significant relationship between retinopathy and gender, females were more than males, this disagree with 20 were found that male are higher retinopathy than female (31.7% vs 19.9%), 23 found that adult diabetic patient with retinopathy had more other associated disease ,in the form of hypertension, heart disease ,diabetic nephropathy and diabetic foot ulcer, which agree with our study results. 24 concluded from their study that retina damage happens slowly in diabetic patients because retinas have tiny blood vessels that are easy to damage. 25 Having high blood glucose and high blood pressure for a long time can damage these tiny blood vessels.

The current study results found that diabetes patient with hyperlipidemia significantly higher in female more than male. 22 explain that people who are insulin resistant typically have an imbalance in their blood lipids (blood fat), with an increased level of triglycerides (blood fat) and a

decreased level of HDL (good) cholesterol. These imbalances in triglycerides and HDL cholesterol increase the risk of heart disease.

The results showed no significant relationship between gender and stroke, the male was higher than female, this agree with 14 which found that male to female ratio of stroke is 2.18 :1, which is higher than that observed by 16 (1.5:1) and 17 (1.6:1), but disagree with 13 who found that stroke diabetes patient were in female higher than male. 18 explain that higher ratio in male patients is due presence diabetes. 14 Strokes is a frequent medical problem occurring in patients with hypertension and other risk factors they concluded that hypertension is the leading risk factor of stroke.^{17,19} The importance of hypertension as a risk factor in stroke is well established.

Non significant results in this study found, but females were more than males with foot problem, this agree with 27 explain that it is because of the common diabetic foot complications include neuropathy, infections, vascular disease and ulcerations. 26,28,29 explains that high blood glucose in diabetes patients can causes two problems that can hurt feet: nerve damage in legs also called diabetic neuropathy so the patient might not feel pain, heat, or cold in legs and feet, that can lead to a sore or an infection, the second problem happens when not enough blood flows to legs and feet. Because it's makes it hard for a sore or infection to heal.

A significant differences between gender and mouth & skin condition showed that women with diabetes have mouth & skin problems more than men. 26 If blood glucose is high, body loses fluid so skin and mouth can get dry causing itchy and scratch this will allow germs to enter and cause infection. In the other hand, nerve damage can decrease the amount sweat, decreased sweating can cause dry skin and mouth.

This study showed no significant hearing problem in patient with diabetes but female are higher incidence than male, this disagree with 20 ,15 They found that the prevalence of hearing impairment was higher among men (52.6%) than in women (49.5%) with diabetes.

The results of this study concluded that women with diabetic mellitus who suffering from the complications are at more risk than male.

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ومضاعفاته في مدينة دهوك\

م. اسيل

ماجستير فلسفة انسان\فاكلتي العلوم الطبيه\جامعة دهوك\

:

نفذت هذه الدراسة للتزود بالمعلومات عن امكانية حدوث المضاعفات لمرضى السكري في مدينة دهوك\العراق و السيطرة عليها عن طريق منع حدوث مضاعفات خطيرة.

305 مريض سكري تم جمع العينات من المرضى المراجعين لمركز

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اظهرت النتائج عدم وجود فرق معنوي ($p>0.05$) بين النسب المئوية لكلا الجنسين

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والتهاب القدم وامراض الكلى و امراض شبكية العين.كذلك اظهرت وجود تاثير معنوي ()

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