

Relation of Diabetes with UTI in PCOS women

By

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Abstract

The study was carried out in Fallujah Teaching Hospital, from January to September 2019 included 100 women suffering from Polycystic Ovary Disease and 100 women who do not suffer from any disease (control group), to evaluate the relation between diabetes and UTI in PCOS women specially with poorly glycemic control as the women with PCOS were identified by means of medical ultrasound consultation, as well as laboratory analyzes for the detection of PCOS and it was known that the women are infected or not with urinary tract infection through clinical examination of the signs that indicate urinary tract infection, as well as a laboratory examination of the urine to detect the presence of bacteria that cause urinary tract infection in the laboratory, and it was known that women with or without diabetes through measuring their glucose level as well as through consultation Medical care provided by specialized doctors about whether they have diabetes or are not afflicted, or if were taking special treatment for diabetes. Four ml of blood were collected from patients and controls in plain tubes for estimation of HbA1c by using immunofluorescence technique. The study showed that majority of PCOS women were obese and with MC irregularity and hirsutism. The study presented that, 40% of PCOS women with UTI suffered from diabetes compared with 60% without UTI, while only 7.14% of PCOS women without UTI were with DM. This study showed that significant number of PCOS women were suffered from abdominal pain, urge to urinate, polyurea , cloudy

urine, thirst, fever, backpain and pyelonephritis. The study showed that, HbA1c was elevated significantly ($P < 0.01$) in 25% PCOS women compared with 6% of healthy control group (5.17%).

Conclusions: There was a significant relation between diabetes and UTI in PCOS women specially with poorly glycemetic control

Keywords: PCOS; HbA1c; UTI; Diabetes

Introduction

Polycystic ovary syndrome is one of the most common diseases that affect women of childbearing age, as most studies have proven that women who suffer from delayed childbearing or primary infertility are those who suffer or not from PCOS, as well as after polycystic ovaries, it occurs more often in women who suffer from overweight Or impose weight ^(1,2). Polycystic ovary disease is one of the diseases that fertilize women and lead to the emergence of symptoms such as increased hair growth on the body and assumptions of the menstrual cycle and its irregularity in women with PCOS^(3,4). And also one of the most important symptoms that afflict women who suffer from polycystic ovaries, we said they also suffer from type 2 diabetes, as there is a strong, statistically significant relationship between diabetes, polycystic ovarian disease, in women who suffer from delayed childbearing ⁽⁵⁾. With regard to urinary tract infection, most women suffer from urinary tract infection due to the disruption of their urinary system strategy, as they suffer from this disease more often compared to men, and there are high indications that women with urinary tract infection also suffer from high sugar level as well as high incidence of diabetes Of the type, there is a strong relationship between urinary tract the emergence of type 2 diabetes, as type 2

diabetes leads to a low level and the emergence of many diseases, including urinary tract infection^(6,7). The study aim of this work was to evaluate the relation between diabetes and UTI in PCOS women specially with poorly glycemc control.

Patients and methods

The study was carried out in Fallujah Teaching Hospital, from January to September 2019 included 100 women suffering from Polycystic Ovary Disease and 100 women who do not suffer from any disease (control group), as the women with PCOS were identified by means of medical ultrasound consultation, as well as laboratory analyzes for the detection of PCOS and it was known that the women are infected or not with urinary tract infection through clinical examination of the signs that indicate urinary tract infection, as well as a laboratory examination of the urine to detect the presence of bacteria that cause urinary tract infection in the laboratory, and it was known that women with or without diabetes through measuring their glucose level as well as through consultation Medical care provided by specialized doctors about whether they have diabetes or are not afflicted, or if were taking special treatment for diabetes. Four ml of blood were collected from patients and controls in plain tubes for estimation of HbA1c by using immunofluorescence technique.

Results

In the following Table 1, general characteristics of studied cases and control. The study showed that majority of PCOS women were obese and with MC irregularity and hirsutism.

Table 1: Distribution of the general characteristics PCOS women

Parameters	PCOS	Control	P value
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	women (n:100)	women (n:100)	
Age (Mean±SD)	25.4±4.2	24.5±3.9	NS
BMI (Mean±SD)	32.4±6.2	26.5±5.9	<0.01
Hirsutism	89%	10%	<0.01
MC irregularity	90%	23%	<0.01
UTI	40%	18%	<0.01
Diabetes	20%	8%	<0.01

The study presented that, 40% of PCOS women with UTI suffered from diabetes compared with 60% without UTI, while only 7.14% of PCOS women without UTI were with DM, Table 2.

Table 2: Relation between UTI and diabetes in PCOS women

Diabetes	UTI in PCOS women			
	Present		Absent	
	No.	%	No.	%
Present	16	40	4	7.14
Absent	24	60	56	92.86
Total	40	100	60	100

P<0.001

This study showed that significant number of PCOS women were suffered from abdominal pain, urge to urinate, polyurea , cloudy urine, thirst , fever , backpain and

pyelonephritis, Table 3.

Table 3: Associated clinical features of PCOS women

Associated clinical features	PCOS women (n:100) (n,%)
Abdominal pain	33%
urge to urinate	25%
Polyurea	34%
Cloudy urine	22%
Thirst	15%
Fever	19%
Backpain	8%
Pyelonephritis	29%

The study showed that, HbA1c was elevated significantly ($P < 0.01$) in 25% PCOS women compared with 6% of healthy control group (5.17%), Table 4.

Table 4: Relation between HbA1c with PCOS.

HbA1c level	Studied groups			
	PCOS		Control	
	No.	%	No.	%
Normal	75	75	94	94
Elevated	25	25	6	6
Total	100	100	100	100

$P < 0.001$

Discussion

The study showed that majority of PCOS women were obese and with MC irregularity and hirsutism. Comparing the results that we have reached in our study, there were recent and various studies that indicate that most women with PCOS suffer

from hirsutism, irregular menstruation, in addition to weight gain and the high level of weight was the predominant features of PCOS⁽⁶⁻¹⁰⁾. The reason for irregular menstruation and weight gain in women with PCOS is due to the irregularity of the hormones I have here, especially the testosterone hormone, which increases, which is enriched with a higher level of normalcy, as well as the estrogen hormone, which gradually decreases, which leads to general disorders in other hormones such as the LH⁽¹¹⁾. The study presented that, 40% of PCOS women with UTI suffered from diabetes compared with 60% without UTI, while only 7.14% of PCOS women without UTI were with DM, Table 2. It is worth noting, are there studies on their few, as they mention that there is a strong relationship between the emergence of diabetes, urinary tract infection, in women who suffer from polycystic ovaries^(12,13). as ovarian cysts eventually lead to the emergence of diabetes in women and that the emergence of diabetes in women in women ultimately leads to decreased immunity, the immune response, known as the home of diseases related to low immunity, which lead to the emergence of general infections, for example urinary tract infection, which in our study is a statistical relationship between urinary tract infection and diabetes in women with polycystic disease⁽¹⁴⁾. This study showed that significant number of PCOS women were suffered from abdominal pain, urge to urinate, polyurea , cloudy urine, thirst , fever , backpain and pyelonephritis, Table 3. On the related level, there are many studies that prove that most people, especially women who suffer from urinary tract infection, actually suffer from a high temperature, stomach ache, back pain, the desire to urinate, in which women who suffer from diabetes do not suffer from frequent urination, thirst and fatigue^(15,16). Other studies have indicated that women who have reached the house of diabetes, in addition to urinary tract infection, suffer from acute colic in the lower abdomen with accompanying burning during urination, high temperatures due to urinary tract infection and diabetes⁽¹⁷⁾. The study showed that,

HbA1c was elevated significantly ($P < 0.01$) in 25% PCOS women compared with 6% of healthy control group. The high level of HbA1c in women with diabetes who suffer from polycystic ovaries, expected results, as this examination is considered one of the most important laboratory tests that indicate the extent to which diabetes does not respond to treatment as well as the non-response of people to the special diet⁽¹⁸⁾. The high level of HbA1c in women with Polycystic ovaries is an important indicator of the development of this disease to important stages, as well as that those women have a high hormonal disruption that leads to the PCOS^(19,20).

Conclusions

There was a significant relation between diabetes and UTI in PCOS women specially with poorly glycemetic control

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