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معدل انتشار داء السكري من النوع الثاني في مدينة العزيزية بين المرضى العراقيين الذين تبلغ أعمارهم ٣٢ عامًا فأكثر

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المستخلص:

داء السكري (DM) هو مرض مزمن تسببه عوامل بيئية وجينية. يتميز بارتفاع مستويات السكر في الدم بسبب عدة عوامل، أبرزها خلل في البنكرياس أو خلل يمنع الأنسولين من العمل بشكل صحيح ويؤدي إلى مضاعفات. يمكن علاج أعراض المرض بالنظام الغذائي والأدوية الفموية. تهدف الدراسة الحالية إلى تقدير أعمار وجنس المرضى، وتحديد الفئة الأكثر عرضة للإصابة بناءً على العمر والجنس، ودراسة علاقتها بمضاعفات داء السكري غير المعتمد على الأنسولين (NDDM)، وإقامة علاقات إحصائية في مدينة العزيزية. تم جمع نتائج مرضى داء السكري من النوع ٢ من المرضى الذين يراجعون قسم الاستشارات في مستشفى العزيزية العام وشملت (١١٠) عينة من كلا الجنسين (٣٤ ذكرًا و٧٦ أنثى). تمت مقارنتها مع بعضها البعض من حيث العمر والجنس. أشارت النتائج إلى أن مجموعة المرضى لديها نسبة أعلى من الإناث المعرضات للخطر؛ ارتفعت نسبة الإصابة بداء السكري من النوع الثاني إلى ٦٩%، وهي نسبة أعلى من انتشار المرض المزمن بين الذكور، الذين بلغت نسبتهم ٣١%. كما أظهرت الدراسة أن المرضى الذين تتراوح

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أعمارهم بين ٦٦ و٧٥ عامًا هم الأكثر عرضة للإصابة بداء السكري من النوع الثاني في مدينة العزيزية، حيث تزيد احتمالية إصابتهم به بنسبة ٣٢,٥%.

الكلمات المفتاحية:داء السكري،السكري من النوع الثاني(T2D) ،داء السكري من النوع الثاني غير المعتمد على الانسولين(NIDDM).

Prevalence of Type 2 diabetes mellitus in Aziziyah City among Iraqi patients aged 32 and older

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Abstract:

Diabetes mellitus (DM) is a chronic illness caused by both environmental and genetic factors. It is characterised by high blood sugar levels due to several factors, most notably a malfunctioning pancreas or a defect that prevents insulin from working properly and leads to complications. Symptoms of the disease can be treated with diet and oral medications.

The current study aims to estimate the age and sex of patients, identify the most vulnerable group based on age and sex, and examine its relationship

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to complications of non-insulin-dependent diabetes mellitus (NDDM), establishing statistical correlations in Al-Aziziyah city.

The results of type 2 diabetes patients (T2D) were collected from patients attending the consulting department at Aziziyah General Hospital and included (110) samples of both sexes (34 males and 76 females). They were compared with each other in terms of age and gender.

The results indicated that the patient group had a higher percentage of females at risk; the incidence of T2D has escalated to 69%, more prevalent than that of the chronic illness in males, who accounted for 31%. The study also showed that patients aged 66–75 were the most vulnerable and 32.5% more likely to develop T2D in Aziziyah City.

Key Words: Diabetes mellitus (DM). Type 2 diabetes (T2D). Non-insulin-dependent type 2 diabetes mellitus (NDDM)

Aims:-

1. A comprehensive study of T2D patients and methods of diagnosis and treatment.

2. Develop statistical methods for T2D patients at Aziziyah General Hospital and compare the relationship between patients in terms of gender and age.

1. Introduction

DM is a non-autoimmune, heterogeneously developing condition characterised by continuously high blood glucose levels. T2D is characterized by inadequate islet β cell insulin production, which is frequently associated with insulin resistance (IR) and metabolic syndrome (MS).(Ma et al., 2022).

Although its aetiology is unclear, T2D, which accounts for 96% of diabetes, is a serious chronic noncommunicable disease that presents a

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serious danger to human health. (Lonardo et al., 2018). Chronic hyperglycemia increases the risk of microvascular disease (DM retinopathy, nephropathy, and neuropathy) and atherosclerotic macrovascular disease (cardiovascular, cerebrovascular, and other peripheral vascular disorders), all of which can result in target organ damage (TOD).

According to this theory, the goal of treatment should be to protect the MDS target organs through comprehensive care. In the sample collected in Aziziyah, there is a significant difference between genders in these ratios ($p < 0.05$).

2. Epidemiology

The high incidence, disability, and mortality of diabetes have rendered it a worldwide health burden, since it is believed to be the eighth most prevalent cause of death and disability combined (Ong et al., 2023). An estimated US$ 966 billion was spent on diabetes treatment for adults aged 20 to 79 worldwide in 2021; by 2045, that amount is expected to rise to over $1054 billion (Sun et al., 2021). Notably, T2D is responsible for about 96% of all cases (Ong et al., 2023).

Several risk factors contribute to T2D, which is a complex multifactorial polygenetic illness. Obesity or preobesity is a significant risk factor for T2D (Kadhim & Kadhim, 2024). There is increasing evidence of a connection between gender differences and T2D (Kautzky-Willer et al., 2016). Despite regional differences, the global male-to-female ratio of 1.14 in 2021 indicated that males were more likely than women to have age-standardized diabetes (Ong et al., 2023).

Another significant risk factor for T2D is age. Globally, the prevalence of diabetes was less than 1% in the 20–year-old age group, while it peaked in the 75–79 age group at 24.4%. Other characteristics that contribute to the risk of type 2 diabetes include low physical activity, alcohol consumption, tobacco use,

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environmental or occupational dangers, and dietary concerns. Furthermore, genetics has a small but significant impact on the risk of T2D.

3. Diagnosis

The degree of hyperglycemia that would cause the onset of non-proliferative retinopathy was the conventional basis for diabetic range readings for biochemical measurements include fasting plasma glucose (FPG) and glycated haemoglobin (HbA1c).One measurement of a biochemical marker in the diabetes range would be necessary to make the diagnosis in the context of classic T2DM symptoms like polyuria and progressive weight loss, or the emergence of cardiovascular problems like ACS (Colagiuri et al., 2011).

4. Treatment

Maintaining a healthy lifestyle is essential in the management of DM. Some individuals with T2D require drugs to help regulate their blood sugar levels. Insulin injections, along with other drugs, may be part of this group. Among the examples are:

{{Sulfonylureas, metformin, and inhibitors of the sodium-glucose cotransporter-2 (SGLT2)}}.

Patients with DM often require blood pressure-lowering medications and statins in addition to blood sugar-lowering medications to lower the potential

Of complications.

Further medical attention could be required to treat the following consequences of DM:

• Foot care for ulcer prevention.

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•Treatment and screening for kidney disease.

• Diabetic retinopathy is a condition that can lead to blindness (Ong et al., 2023).

5.1. Subjects and Period of Study

This study was conducted on (110) patients attending the consulting unit at Al-Aziziyah General Hospital in Wasit Governorate, of all ages and both gender, were included. The diagnosis of T2D is made based on the recommendations of a specialized Consultant. For statistical purposes, the patients were divided into four groups:

Group 1: patients between the ages of 32 and 43.

Group 2: patients between the ages of 44 and 55.

Group 3: patients between the ages of 56 and 65.

Group 4: patients between the ages of 66 and 75.

Each group was compared with other groups of both genders to determine the potential relationship between the highest value of a single disease group and their gender and registration.

5.2. Participants Exclusion criteria:

- Type 1 diabetes or gestational diabetes.

6. Statistical Methods:

A computer was used to analyse the results with SPSS version 22. Categorical variables are expressed as frequencies (%) and continuous variables as mean ± SD. The chi-square ($\chi 2$) test was employed to compare the groups. A p-value of less than 0.05 is regarded as statistically significant.

7. Results and Discussion:

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7.1. Gender:-

Statistics conducted on patients who visited the consultation unit at Al-Aziziyah General Hospital in Wasit during 2025/01/02 to 2025/03/02 showed that the number of patients reached 110, of whom 34 were males and 76% were females. The proportion of women was higher than that of men, as shown in Table 1.

Table (1): shows the percentage of both genders.

Patients	Number	**Percentage**	**P value**
Male	٣٤	31 %	
Female	٧٦	69 %	**P < 0.05 ***

In the sample collected in Aziziyah, there is a significant difference between genders in these ratios ($p < 0.05$).

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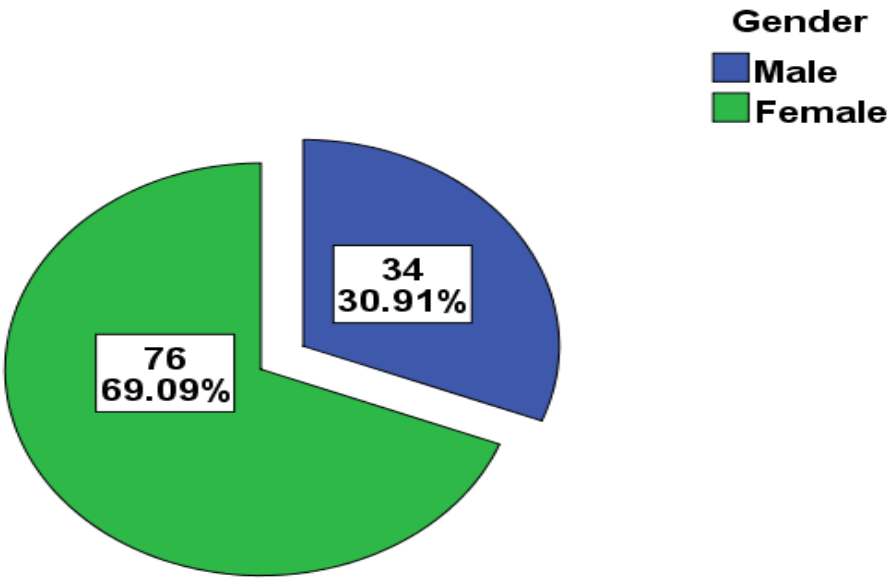

Figure (1): illustrates the proportion of patients by gender.

The study also showed that females, at 69 %, were more likely to suffer from T2D than males, at 31%, as shown in Table (2). The findings of research by Ueno et al., 2010, which showed that the features of participants in each age group are comparable, are in agreement with this. There were more women than men in the percentage.

Also, (Mauvais-Jarvis, 2017) has also shown that women may exhibit a 4.3-fold increase in hypertension and a 2.1-fold increase in obesity rates, which is consistent with global trends in metabolic risk accumulation in diabetic women. In addition, insulin resistance and endothelial dysfunction are exacerbated by the loss of oestrogen after menopause.

7.2. Age:

The study also showed that patient aged 66-75 were the most vulnerable and most at risk for type 2 diabetes in Aziziyah city, at 32.5%. Patients aged

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56-65 accounted for approximately 28% of the total, while those aged 44-55 accounted for 22%. Finally, patients aged 32-43 accounted for approximately 17%, as shown in table (2), Figure (2).

Table (2): Shows the percentage of ages of all patients.

Groups	Age	Percentage
Group 1	32-43	17.24 %
Group 2	44-55	22.38 %
Group 3	56-65	27.90 %
Group 4	65-75	32.48 %

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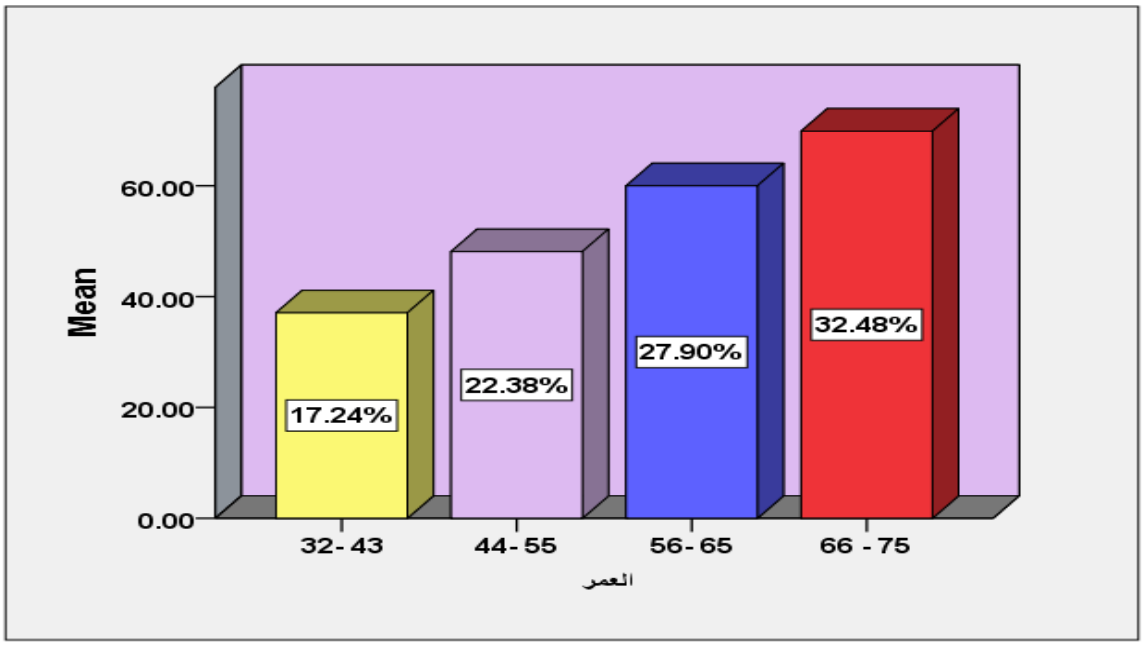

Figure (2):- illustrates the age ranges of people with T2D**.**

Statistics show that the likelihood of developing the disease increases with age, consistent with several previous studies. According to this study, T2D was most prevalent in those aged 61 to 65. This data is fairly in line with what was found (Al-Musawi et al., 2021). According to this study, the pathophysiology of glucose intolerance in older people is influenced by multiple factors. The most important thing is that ageing affects the replenishment of functional B cells or decreases their efficacy, which increases insulin resistance and speeds up the reduction in insulin resistance. also (Cho, 2018), where T2D was most frequently diagnosed in people between the ages of 45 and 64. According to ADA research (American Diabetes Association, 2021), age and gender have a direct impact on how well people manage their diabetes, with women and seniors 60 years of age and older being impacted by the confluence of several cardiac and kidney-related medical disorders, which results in prescription medication limitations and insufficiencies.

7.3. Duration:-

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The distribution of all patients according to duration of T2D was summarized in table (3).

Table (3): Duration of all patients according to duration T2D.

Duration of diabetes groups	Male		Female		Total	
	No.	%	No.	%	No.	%
< year	8	24	27	36	35	31.8
1-4 years	15	44	30	39	45	40.9
5-9 years	9	26	18	24	27	24.5
> 10 years	2	6	1	1	3	2.7
Total	34	100	76	100	110	100

The highest percentage of T2D patients with duration of 1-4 years was approximately 40.9%, while the percentage of T2D patients with duration of 5-9 years was approximately 24.5%, and the percentage of T2D patients with duration of less than 1 year was approximately 31.8%. Finally, the percentage of T2D patients with duration of more than 10 years was approximately 2.7% among both males and females.

8. Conclusions

Based on the findings of this investigation, the prevalence of T2D has increased, which is of public health concern given its increase compared to previous years. Additionally, this survey revealed that the majority of diabetic patients are women, aged 66 to 75, in the Aziziyah city. Due to a family history of type 2 DM, this group is inclined to develop the condition.

9. Recommendations

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The results of this study recommended investing in research and health systems in Aziziyah City to reduce this increasing rate of diabetes. Second, the development and enhancement of media education initiatives should be prioritised in order to increase public knowledge of the difficulties and issues associated with type 2 diabetes. Third, regular exercise can help patients lose body mass, which has been found to be a persistent risk factor for complications in diabetes. Despite the increased likelihood of type 2 DM to occur in those with a family history, environmental variables, including lifestyle, may be changed. As a result, eating fruits and vegetables and getting regular exercise are advised.

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