

Original Research

Incidence of Diabetic Nephropathy among Patients in Kidney Department in Al-Wahda Hospital, Derna

Ameerah Emran Asmaeil^{*1}, Ebrika Ramadan Esrafil¹, Aya Nori Akroosh¹, Retaj Ben Saod¹ and Abdel Moamen Eldresy¹

¹Department of Zoology, Faculty of Science, University of Derna, Derna, Libya

^{}Corresponding Author: Ameerah Emran Asmaeil. E.mail: ameraomran85@Gmail.com*

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ABSTRACT:

This study aims are to find out the effect of diabetes and diabetic nephropathy on kidneys, and to identify age and gender of susceptible cases to these diseases. The study were performed in kidney and internal medicine departments in Al-Wahda Hospital in Derna, Libya. Approximately, 100 cases suffering from diabetes and diabetic nephropathy with varying ages

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were recorded. The results showed that females were more susceptible to developing diabetes, while males were more susceptible to developing diabetic nephropathy. The age group of most susceptible to developing diabetes and diabetic nephropathy was between 51-70 year. where data is found 31 cases were with diabetes nephropathy and 9 patients were diagnosed only with diabetes in this age group . This indicates that diabetes has an impact on kidney disease if the affected person does not practice a healthy lifestyle and does not receive regular follow-up of the disease.

KEYWORDS: Diabetes, Diabetic Nephropathy, Kidney, Derna.

INTRODUCTION

Diabetic nephropathy is marked by structural changes such as glomerular hypertrophy, thickening of the tubular and glomerular membranes, and buildup of extracellular matrix, all of which contribute to both glomerular and tubulointerstitial fibrosis and sclerosis. (Gaballa & Farag, 2013; Lei *et al.*, 2013; El Mesallamy *et al.*, 2012).

Early in the disease, diabetic patients may develop albuminuria, which serves as a sensitive indicator of kidney damage progression. this stage is often associated with glomerular abnormalities, including changes in podocyte structure, reduced nephrin expression, and an elevated filtration rate—commonly observed in diabetic nephropathy.

Overall, it considers a chronic condition characterized by progressive glomerular hypertrophy, temporary glomerular (GFR) (Radbill *et al.*, 2008; Sun *et al.*, 2013; Germino, 2011; Schjoedt *et al.*, 2006).

MATERIALS AND METHODS

This study was conducted on patient in Derna hospital during the period of 1/3/2024 to 1/6/2024 and this study include 100 cases of both males and females from different ages.

Questionnaire was used to collect information about the patients' health condition with the assistance of the specialist doctor, the questions directed to patients were as follows :

- 1- How old are you?
- 2- What is your gender?
- 3-Do you suffer from diabetes?
- 4- How long does diabetes last?
- 5-Do you follow a healthy diet?
- 6-Do you maintain regular treatment doses?
- 7-Do you suffer from kidney disease?
- 8-Duration of kidney disease?

The excel program was used to obtain the percentage of females and males with diabetes, diabetic nephropathy and kidney disease, and to obtain the ages most at risk.

The number of cases with kidney disease due to other causes was also calculated. histograms were used to represent the relationships between diabetes and diabetic nephropathy and the number of cases affected by two disease .

RESULTS AND DISCUSSION

After reviewing the questionnaire that was filled out by patients of kidney department and the internal medicine department at Al-Wahda hospital, Derna. The following results were reached:

1.The Incidence of Diabetes Among Males and Females:

Table 1: The Incidence of Diabetes in Males and Females:

Females with Diabetes	Males with Diabetes
10	9
52.63%	47.37%

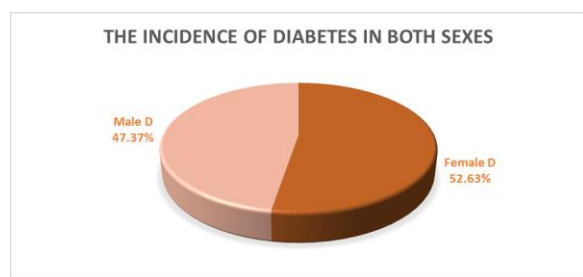


Figure 1: The Incidence of Diabetes in Males and Females

In the present study, findings indicated that females were more prone to developing diabetes than males. this aligns with previous research suggesting gender-based differences in diabetes susceptibility. Although the global prevalence of diabetes tends to be higher in men overall, type 2 diabetes appears to affect a greater number of women (Campesi *et al.*, 2017; Leon, J. S. T, 2023). during puberty, the incidence of type 1 diabetes tends to be lower in girls, likely due to their stronger residual β -cell function compared to boys (Samuelsson *et al.*, 2013). this pattern implies a temporary protective role of female sex hormones

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against type 1 diabetes, particularly in adolescents with low estrogen levels, who may be at higher risk of developing the disease. (Martínez *et al.*, 2016; Tiano & Mauvais-Jarvis, 2012).

2.The Incidence of Diabetic Nephropathy in Males and Females:

When calculate the percentage, the results showed that the incidence rate for males was 61%, while females was 38.39%. this means that males are more susceptible to diabetic nephropathy compared to females in current study

Table 2: The Incidence of DN In Males and Females:

Females with DN	Males with DN
28	44
38.89%	61.11%

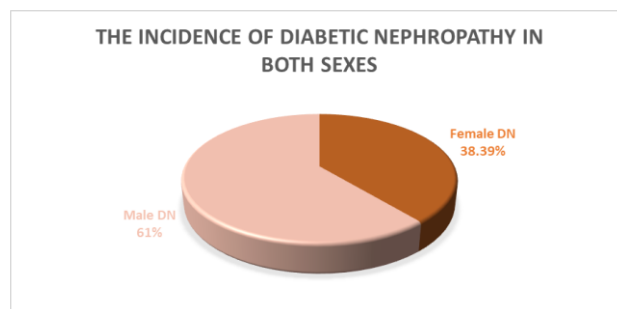


Figure 2: The Incidence of Diabetic Nephropathy in Males and Females.

In individuals with diabetes, males appear to be at greater risk of developing diabetic nephropathy compared to females. This observation is consistent with the findings of the current study. research has consistently shown that men with type 2 diabetes tend to exhibit higher rates of albuminuria than women, indicating a greater susceptibility to renal complications. in comparative studies involving adults under the age of 66, a

significantly higher prevalence of persistent albuminuria was reported in males than in females.

These findings support the current results, suggesting that male sex is an independent risk factor for the progression of kidney damage in diabetes .

3.The Number of Cases with Diabetic Nephropathy, Diabetes in Different Age Groups:

The current results showed that the age group between 10 and 30 years old had only one case of diabetic nephropathy, while diabetes had 3 cases..

As for the age group between 31 – 50 years, the number of cases with diabetic nephropathy disease was 11 cases, while the number of cases with diabetes was 6 cases.

Another age group between 51 – 70 years, the number of cases with diabetic nephropathy disease was 31 cases, while the number of cases with diabetes was 9 cases.

In the cases age up to 70 years, the number of cases with diabetic nephropathy disease was 3 cases, while the number of cases with diabetes was 2 cases.

We found from this result that long term diabetes with non-adherence to nutrition and treatment leads to diabetic nephropathy, as the age group most susceptible to diabetic nephropathy is between 51 and 70 years of age.

Table 3: The Number of Cases with DN, DM in Different Age Groups

Age	DN	DM
10 to 30	1	3
31 to 50	11	6
51 to 70	31	9
up to 70	3	2

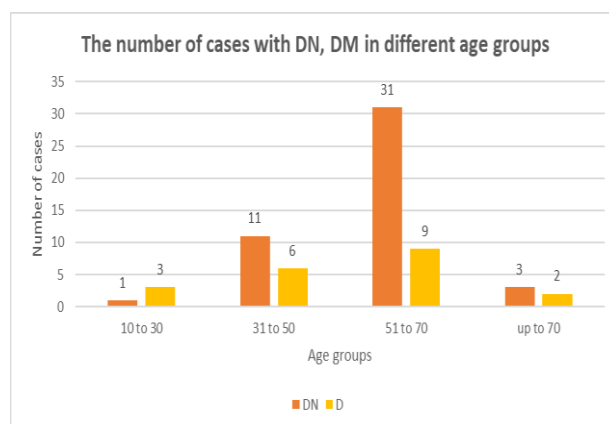


Figure 3: The Number of Cases with Diabetes and Diabetic Nephropathy in Different Age Groups.

The results indicate that kidney filter damage occurs due to chronically high blood sugar levels, particularly when exceeding 200 mg/dl.

Additionally, the longer a person has diabetes, the greater the risk of kidney damage (Tandra, 2018).

CONCLUSION

In short, the study concluded that diabetes has harmful effects on many organs of the body, including the kidney.

Especially if an appropriate diet is not followed and appropriate treatment is not taken at the specified times and exercise is neglected, especially after a long time has passed since contracting the disease.

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المخلص

تهدف هذه الدراسة إلى معرفة تأثير داء السكري واعتلال الكلية السكرية على الكلى، وتحديد عمر وجنس الحالات المعرضة للإصابة بهذه الأمراض. أجريت الدراسة في قسمي الكلى والباطنية في مستشفى الوحدة في درنة، ليبيا. تم تسجيل ما يقرب من 100 حالة تعاني من داء السكري واعتلال الكلية السكرية من مختلف الأعمار. أظهرت النتائج أن الإناث أكثر عرضة للإصابة بداء السكري، بينما كان الذكور أكثر عرضة للإصابة باعتلال الكلية السكرية. كانت الفئة العمرية الأكثر عرضة للإصابة بداء السكري واعتلال الكلية السكرية بين 51-70 عامًا. حيث وجدت البيانات أن 31 حالة كانت مصابة باعتلال الكلية السكرية وتم تشخيص 9 مرضى فقط بمرض السكري في هذه الفئة العمرية. وهذا يشير إلى أن داء السكري له تأثير على أمراض الكلى إذا لم يمارس الشخص المصاب نمط حياة صحي ولم يتلق متابعة منتظمة للمرض.

الكلمات المفتاحية: مرض السكري، مرض الكلى السكري، درنة.

