

Introduction

Diabetic nephropathy (DN) is one of the most common complications of diabetes mellitus (DM) and is the commonest cause of chronic kidney disease worldwide. DN presents as progressive albuminuria and/or increasing serum creatinine levels and it is diagnosed by performing a spot albumin-creatinine ratio (ACR) and serum creatinine (sCr). Patients with type 2 DM should be screened with ACR and sCr at the onset of DM and annually thereafter. Diabetic patients may still be affected by other causes of chronic kidney disease apart from DN and these are collectively referred as non-diabetic kidney disease (NDKD). DN is a clinical diagnosis and patients who have an atypical presentation of DN, those with a short duration of diabetes, those without retinopathy should be investigated for NDKD. The only definitive method of differentiating diabetic kidney disease (DKD) from NDKD is by performing a biopsy.

Aim of the work

The primary aim of this study was to check the prevalence of NDKD amongst patients with type 2 DM.

Subjects and Methods

Methodology:

The study was a retrospective study over the last 10 years. (January 2011 and December 2020). It looked at all type II diabetic patients who underwent kidney biopsies. These were mostly patients who had an atypical presentation of diabetic kidney disease or were suspected to have non-diabetic kidney disease. *We excluded patients who were:*

- Under the age of 18 years.
- Missing data from the patients' files.
- Biopsy from a transplanted kidney.

We analyzed the data and calculated the prevalence of NDKD amongst patients with type 2 DM.

Results

We collected a total of 677 patients with DM. We found 285 patients (42.7%) had NDKD, 220 patients (33%) had DKD and 162 patients (24.3%) had mixed disease. We further analyzed these patients with NDKD and mixed disease and we found that membranous glomerulonephritis was the most common with a prevalence of 20.8%.

Table 1: Distribution of the studied cases according to biopsy (n = 677)

Biopsy	No.	%
NDKD	285	42.7
DKD	220	33.0
Mixed	162	24.3

Table 2: Comparison between the three studied groups according to demographic data

	NDKD (n = 89)		DKD (n = 67)		Mixed (n = 36)		Test of sig.	p
	No.	%	No.	%	No.	%		
Sex								
Male	59	66.3	41	61.2	18	50.0	$\chi^2=2.875$	0.237
Female	30	33.7	26	38.8	18	50.0		
Age (years)								
Min. – Max.	32.0 – 83.0		30.0 – 72.0		38.0 – 68.0		F=2.814	0.062
Mean ± SD.	55.06 ± 10.45		51.45 ± 9.45		54.50 ± 7.89			
Median (IQR)	55.0 (48.0 – 62.0)		53.0 (45.0 – 56.50)		54.0 (50.0 – 61.0)			

Table 3: Comparison between the two studied groups according to specific lesion

Specific lesion	NDKD and Mixed (n = 125)		NDKD (n = 89)		Mixed (n = 36)	
	No.	%	No.	%	No.	%
Membranous glomerulonephritis	26	20.8	22	24.7	4	11.1
Acute tubular injury (ATI)	24	19.2	9	10.1	15	41.7
Focal segmental glomerulosclerosis (FSGS)	19	15.2	18	20.2	1	2.8
Renal amyloidosis	13	10.4	11	12.4	2	5.6
Minimal change disease	6	4.8	5	5.6	1	2.8
Membranoproliferative glomerulonephritis (MPGN)	6	4.8	4	4.5	2	5.6

Conclusion

We found that the prevalence of NDKD amongst the Egyptian patients with type 2 DM was at 42.7%. This figure due to selection bias is high and isn't representative of the prevalence of NDKD in the general population with DM. It however, serves to show that the prevalence is high in a selected group of DM patients with atypical presentation of DKD.