Screening For Nephropathy in Type 2 Diabetes Mellitus Among Out Patients of NRIIMS

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Abstract
Aim: *To screen the type 2 patients of medical OPD of NRIIMS for diabetic Nephropathy*
Materials and Methods: *200 Type 2 diabetic patients reporting to medical OPD of NRIIMS and suffering from diabetes for more than 6 yrs were estimated for urine microalbumin.200 healthy patients were taken as controls*
Observations*: Out of 200 Controls 120 were male and 80 were female.127 (63.5%)patients among cases showed urine microalbumin levels in less than 25 mg/dl range and 73 cases(36.5%) showed urine microalbumin levels between 25 -300.The Mean for cases was 61.63 with SD of 81.94,t value of 7.5 and p value less than 0.0001.The Mean for Controls was 17.69 with SD of 4.34*
Conclusion: *36.5 % patients were known to have high urine microalbumin levels and said to have diabetic nephopathy.These patients need to be evaluated more for more complications .*

I.   Introduction

Diabetes is a chronic disease characterized by hyperglycemia and produced due to insulin deficiency[1]. An estimated 23.6million people are affected by this disease in the US. It is classified into type 1 and type 2diabetes[2]. Other types includes MODY (Maturity onset Diabetes Mellitus), diabetes due to mutant insulin, diabetes due to mutant insulin receptors, wolfram syndrome etc[3]. There is also what is called metabolic syndrome[4] where obesity plays a role in development of diabetes mellitus thru insulin resistance[5]. It is diagnose by biochemical parameters like FBS PPBS and GTT.It leads to complications like Diabetic Ketoacidosis[6].Improer use of OHGs and insulin may lead to hypoglycaemia[7].Uncontrolled diabetes over a certain period might lead to diabetic nephropathy[8].

II.   Materials And Methods

Urine Microalbumin levels from 200 diagnosed cases OF Type2 Diabetes Mellitus ,duration 6 yrs,reporting to Medical OPD of NRIIMS were analysed from the period 01-01-2017 to 30-06-2017.Written consent was taken from the patients and permission taken from the Head Of the Institute.Ethics committee clearance was taken. 200 healthy patients were taken as Controls and urine Microalbumin was analysed in them as well.

Inclusion Criteria

All type2 Diabetes Mellitus patients Duration of Diabetes more than 6yrs Patients reporting to medical OPD of NRIIMS only Age above 30 yrs(both males and females)

Exclusion Criteria

Patients suffering from UTI were excluded Patients on drugs like NSAIDS were excluded Urine microalbumin levels were analysed using Chem7 semiautoanalyser Samples were collected irrespective of time Kits purchased from Pavan Diagnostics Visakhapatnam Data was analysed using 't' Test method

III.   Results

Screening for nephropathy in type 2 diabetes mellitus:

Table No.1 Distribution of subjects according to Age & Sex:

Cases (n₁=200)				Controls (n₂ =200)		
Age Group	Male (125)	Female(75)	Total	Male(120)	Female(80)	Total
50-54	49 (24.5)	31 (15.5)	80 (40.00)	50 (25.00)	32 (16.00)	82 (41.00)
55-59	46 (23.00)	26 (13.00)	72 (36.00)	44 (22.00)	29 (14.5)	73 (36.5)
60-64	25 (12.5)	14 (07.00)	39 (19.5)	21 (10.5)	15 (7.5)	36 (18.00)

| 65-69 | 05 (2.5) | 04 (02.00) | 09 (4.5) | 05 (2.5) | 04 (2.00) | 09 (4.5) |
| Total | 200 (62.5) | 75 (37.5) | 200 (100.0) | 120 (60.00) | 80 (40.00) | 200 (100.0) |

- The mean age of cases is 56.33 ± 4.44 years and the controls are 56.17 ± 4.37 years of no significance difference in the age group.
- X^2 value is 0.152; degrees of freedom = 6 $P > 0.05$. The proportions in both the groups are same.

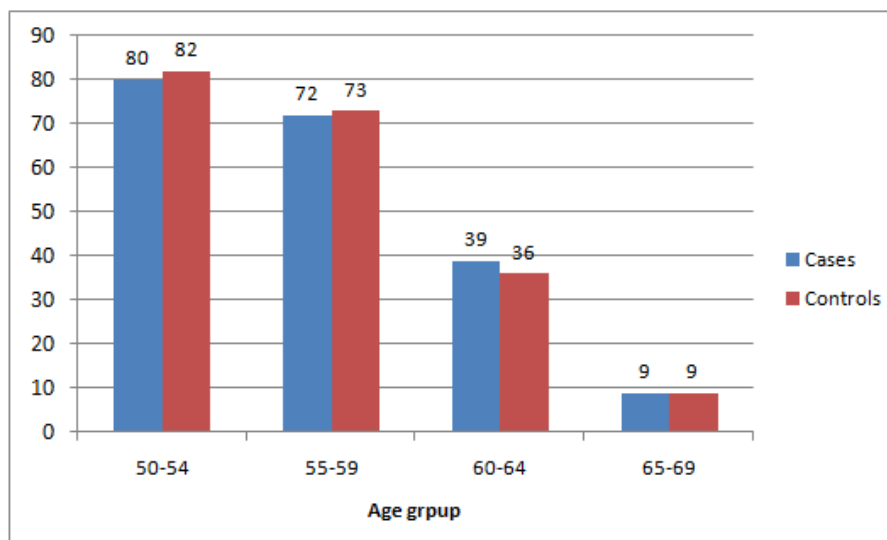**Fig-1**

DISTRIBUTION OF SUBJECTS ACCORDING TO AGE & SEX

Table No.2 Distribution of subjects according to Urine Micro Albumin in Cases & Controls:

Cases (n_1=200)			Controls (n_2=200)		
Urine Micro Albumin	Number	Percentage	Urine Micro Albumin	Number	Percentage
<25	127	63.5	< 25	187	93.5
25-300	073	36.5	25-300	00	00
Total	200	100.0	Total	200	100.0

X^2 **value 53.325; degrees of freedom = 1; $P < 0.0001$ Urine Micro Albumin readings differing significantly.**

Table No 2 (A) Maximum, Minimum & Range of Urine Micro Albumin in Cases and Controls.

Category		Cases	Controls
1.	Maximum	25	15
2.	Minimum	10	280
3.	Range	15	265

Table No 3. Parameters of Urine Micro Albumin:

Details		Cases	Controls
1.	Sample Size (n)	200	200
2.	Means	61.63	17.69
3.	Standard deviation	81.94	4.34
4.	Mean difference	43.94	
5.	SE	5.80	
6.	t value	7.5730	
7.	Degrees of Freedom	398	
8.	P value	P < 0.0001	
9.	Confidence Interval (95%)	32.5333 to 55.3467	

IV.   Observations

Out of 200 Cases 125 were Male and 75 were female.49 were in the age group of 50 to 54 ,46 in 55-59 age group 25 in the age group of 60-64 and 5 were in the age group of 65-69.Out of 200 Controls 120 were male and 80 were female.127 (63.5%)patients among cases showed urine microalbumin levels in less than 25 mg/dl range

and 73 cases(36.5%) showed urine microalbumin levels between 25 -300.The Mean for cases was 61.63 with SD of 81.94,t value of 7.5 and p value less than 0.0001.The Mean for Controls was 17.69 with SD of 4.34 Mohan ram and Toto [10]in their studies showed similar results.Gary C.W.Chan[11] etal showed similar results

Conclusion: Conclusion:36.5 % patients were known to have high urine microalbumin levels and said to have diabetic nephopathy.These patients need to be evaluated further for more complications .

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