

Prevalence of Kidney Disorders in Selected Diabetics

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Abstract: *Diabetes mellitus is the universal problem affecting human societies at all stages of development. Diabetic nephropathy affects approximately one third the diabetics. The study was conducted to find out the prevalence of kidney disorders in selected diabetics. Details regarding socio-economic, past medical history, family history of diabetes were collected using well-structured interview schedule. One hundred and fifty diabetics between the age group of 25-65 were selected for the study by purposive sampling method. The study indicates 60 per cent of them having kidney disease, from which 52 per cent confirmed as diabetic nephropathy. India is in a very crucial stage and awareness on the part of people and administration about diabetes is very essential, adding that people should be made aware and educated about their health and fitness level to reduce the number of diabetic patients in India.*

Keywords: diabetes, kidney disease, diabetic nephropathy, lifestyle of diabetics

1. Introduction

Health includes physical, social and psychological well-being. Human beings are exposed to climate change through changing weather patterns and indirectly through changes in water, air, food quality and quantity, ecosystems, agriculture, livelihoods and infrastructure. These direct and indirect exposures can cause death, disability and suffering (Confalonieriet al., 2007).

According to Karimet al., (2003), non-communicable diseases, such as heart disease, diabetes, stroke and cancer, account for nearly half of the global burden of disease (at all ages) and the burden is growing fastest in low and middle-income countries.

India has been declared as the „Diabetic Capital of the World“. The International Diabetes Federation estimates that number of diabetic patients in India doubled from 19 million in 1995 to 40.9 million in 2007. It is projected to increase to 69.9 million by 2025 (Sahibaet al., 2008).

Reduced physical activity is observed in association with the “urbanization and westernization” process and seems to affect risk of diabetes independently of diet (Radhaet al., 2007). Prominent risk factors are obesity, family history of diabetes, previous gestational diabetes mellitus, and race/ethnicity. In the next 50 years, diagnosed diabetes is predicted to increase by 165% in the United States, with the largest relative increases seen among African Americans, American Indians, Alaska Natives, Asian and Pacific Islanders, and Hispanic/Latino persons (Centers for Disease Control and Prevention, 2004).

Diabetic nephropathy is a clinical syndrome characterized by persistent albuminuria, arterial blood pressure elevation, a relentless decline in glomerular filtration rate (GFR), and a high risk of cardiovascular morbidity and mortality (Jawaet al., 2004).

Sixty per cent of the patients suffering from chronic kidney diseases in India are either diabetic or suffer from high blood pressure (Times of India, 2013). Approximately 30 to 40% of

all patients with diabetes developed nephropathy and many progressed to End Stage Renal Disease, necessitating dialysis or kidney transplantation (Janice et al., 2002).

Diabetes mellitus is the most common cause of chronic kidney disease. Hyperglycaemia is an independent risk factor for nephropathy. According to Snivelyet al., (2004), intensive blood glucose control significantly reduces the risk of developing chronic kidney disease and reduces cardiovascular risk. Causes of chronic kidney disease include diabetes mellitus, hypertension, ischemia, infection, obstruction, toxins, and autoimmune and infiltrative disease. Hence, the study is carried out with the following objectives:

- To elicit information on socio economic, anthropometric measurements and biochemical parameters of the selected diabetics.
- To know the dietary pattern, food intake and lifestyle pattern of the selected diabetics.
- To find out the stress level and quality of life of the selected diabetics.

2. Materials and Methods

Collection of background data

One hundred and fifty patients between the age group of 25-65 were selected for the study. Sample selection was done randomly. Of these 150 patients, 84 were male and 66 were female. Only those patients who were having fasting blood glucose level more than 100 mg/dl, post prandial blood glucose level more than 140 mg/dl were chosen for the study.

A structured interview schedule was formulated by the investigator to elicit information regarding the socio-economic status such as age, sex, family type; dietary pattern such as meal consumption, skipping of meals, consumption of carbonated beverages, consumption of junk foods, diabetic problems and complications along with symptoms experienced by the diabetics; anthropometric measurement such as height, weight, waist, hip, body mass index and waist hip circumference; and lifestyle pattern such

as consumption of tea/coffee, exercise, smoking, drinking alcohol and other habits like chewing of pan masala, tobacco and betel leaves.

3.Results and Discussion

Background information

The age and gender distribution of the selected diabetics is discussed in the table I

Table I: Age and Gender Distribution of the Selected Diabetics

Age (years)	Male		Female		(χ^2) Chi Square
	Number	Per cent	Number	Per cent	
25-35	11	13.1	8	12.1	34.62**
36-45	20	23.8	12	18.2	
46-55	21	25.0	19	28.8	
56-65	32	38.1	27	40.9	
Total	84	100	66	100	

** - Significant at 1% level

Table I shows that majority of the diabetics were in the age group of 56-65, i.e. almost 38% male and 41% female, followed by the age group of 46-55 where there were 25% males and 29% females. The table reveals that as one progresses with age, greater the risk.

Risk factors and age of the selected diabetics were analyzed statistically by using chi-square test. The result shows that there is a significant relationship at one percent level.

Duration of disease condition of the selected diabetics is shown in Figure 1

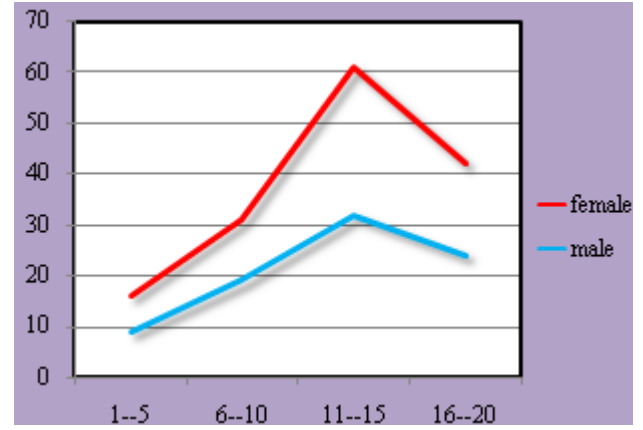


Figure 1: Duration of Disease Condition of the Selected Diabetics

From figure I, it is shown that 9 male and 7 female patients had diabetes since 1-5 years, 19 male and 12 female patients had diabetes since 6-10 years. After going through the figure it is clear that all through the periods of life, males have higher rate of diabetes. Type of diabetes of the selected diabetics is explained under table II

Table 2: Type Of Diabetes of the Selected Diabetics

Type of Diabetes	Male		Female	
	Number	Per cent	Number	Per cent
I	28	33.3	20	30.3
II	56	66.7	30	45.5
Juvenile	Nil	Nil	Nil	Nil
Gestational	Nil	Nil	16	24.2
Total	84	100	66	100

From table II, it is found from the table that none of the selected diabetics were having juvenile diabetes.

Lifestyle pattern

Fifty four male and 40 female patients went for walking, while 5 male went for cycling, 3 female went for jogging, and 15 male subjects worked out at gym.

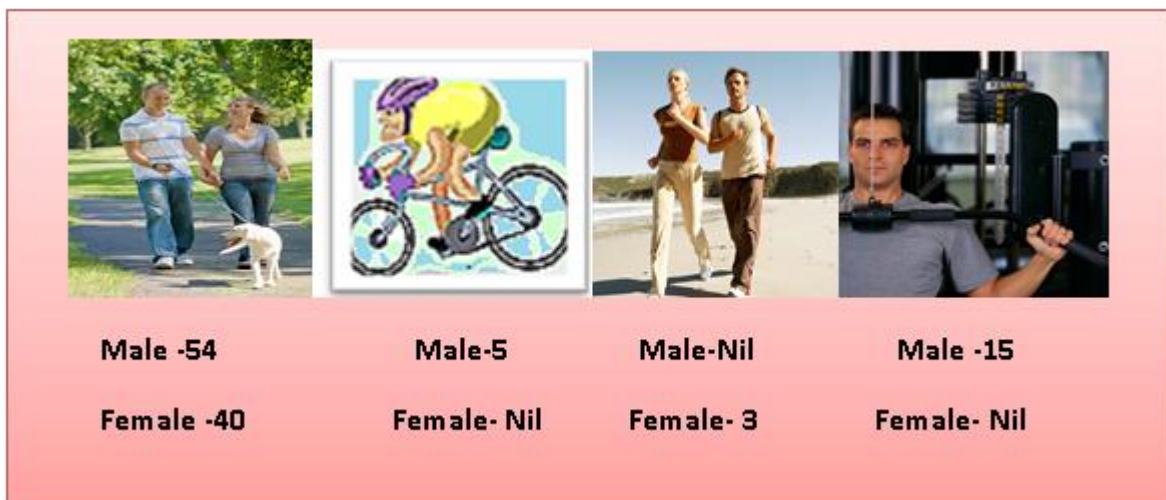


Figure 2: Exercise Pattern of the Selected Diabetics

Thirty four male and no female patients smoked cigarette. Among them, 12 male patients smoke cigarette daily and 22 male patients smoke cigarette occasionally.

Smoking is a strong risk factor for cardiovascular mortality in patients at risk for chronic kidney disease. It also is strongly associated with the progression of nephropathy. The

results of one small study showed that smoking cessation reduced the progression of kidney disease by 30 per cent in patients with type 1 diabetes.

Dietary pattern

Frequency of consumption of junk foods by the selected diabetics is analysed under table III

Table 3: Frequency Of Consumption Of Junk Foods

Frequency of consumption of junk foods	Male		Female		(χ^2) Chi Square
	Number	Percent	Number	Percent	
Daily	Nil	Nil	Nil	Nil	45.16**
Weekly	15	17.8	13	19.7	
Monthly	25	29.8	17	25.8	
Occasionally	44	52.4	36	54.5	
Total	84	100	66	100	

** - Significant at 1% level

From table III, it clarifies that 52% male and 55% female consumed junk foods occasionally as they were aware about the side effects of consuming junk foods.

Risk factors and consumption of junk foods by the selected diabetics were analyzed statistically by using chi square test. The result shows that there is a significant relationship at one percent level.

Anthropometric details

Body Mass Index of the selected diabetics is drawn under figure III

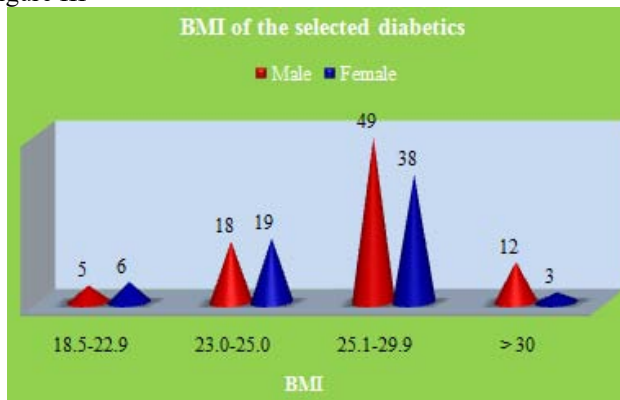


Figure 3: Body Mass Index of the Selected Diabetics

Figure III shows that 5 male and 6 female patients had BMI between 18.5-22.9, 18 male and 19 female patients had BMI between 23.0-25.0, 49 male and 38 female patients had BMI between 25.1-29.9, 12 male and 3 female patients had BMI above 30.

Prevalence of Kidney disease

Type of kidney disease suffered by the selected diabetics is discussed in table IV

Table 4: Type of Kidney Disease Suffered by the Selected Diabetics

Kidney disease	Male		Female	
	Number	Per cent	Number	Per cent
Yes	49	58.3	41	62.1
No	35	41.7	25	37.9
Total	84	100	66	100
Type of kidney disease				
Glomerulonephritis	Nil	Nil	Nil	Nil
Nephritic syndrome	Nil	Nil	Nil	Nil
Renal calculi	4	8.2	6	14.6
Acute kidney injury	Nil	Nil	Nil	Nil
Chronic Kidney Disease	19	38.8	14	34.2
Diabetic nephropathy	26	53.0	21	51.2
Total	49	100	41	100

From table IV, it is shown that 49 male and 41 female patients were having kidney disease, whereas 35 male and 25 female patients were not having kidney disease. From table 4.21, it is shown that 4 male and 6 female patients were having renal calculi, 19 male and 14 female patients were having chronic kidney disease, 26 male and 21 female patients were having diabetic nephropathy.

4. Summary and Conclusion

We live in a world where causes overtook treatment; pollution overtook clarity, where there are limited resources but unlimited needs. And as one progress with age, greater is the risk of getting various kinds of diseases.

Off late, there is a growing awareness among the citizens about the causes of the dreadful diseases as 62 per cent male and 74 per cent female of the total 150 subjects did not take heavy meals at night time and 45 per cent started taking special foods to reduce blood sugar level like fenugreek seeds and leaves, guava leaves and medicinal herbs. Among the selected diabetics, 60 per cent of them had kidney disease, from which 52 per cent confirmed as diabetic nephropathy.

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