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Original article:

Demographic study of Type 2 Diabetes Mellitus

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Abstract

Introduction: According to diabetes atlas (7 edition), the global prevalence of diabetes is estimated at 415 million (8.8%), which is predicted to rise to 642 million in next 25 years. In India, there are about 69.2 million people with diabetes and are expected to cross 123.5 million by 2040.

Materials and methods The present cross sectional study was conducted on randomly selected newly diagnosed type 2 diabetes mellitus cases coming to the Department of Medicine, Padmashree Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune. The period of data collection was spread over one and half year months from October 2017 to March 2019. After collection of data, the data entry forms were checked for their completeness and missing and incomprehensible data was rechecked from the respective participant profile.

Results: Mean age of the patients was 54.32 year (standard deviation 7.12 years). Age of the patients ranged from minimum 42 year to maximum 70 year.

Conclusion: Prevalence was higher in male gender, hypertensive persons, obese person, deranged WHR, deranged glycemic control, dyslipidemia.

Introduction:

According to diabetes atlas (7 edition), the global prevalence of diabetes is estimated at 415 million (8.8%), which is predicted to rise to 642 million in next 25 years. In India, there are about 69.2 million people with diabetes and are expected to cross 123.5 million by 2040. [1]Moreover, worldwide approximately 193 million diabetics remain undiagnosed predisposing them to the development of several long-term complications of untreated chronic hyperglycemia. [2] Previous observational studies in patients with and without type 2 diabetes have reported a progressive linear relationship between glycaemic exposure and the risks of vascular complications and death. [3]

Materials and methods

The present cross sectional study was conducted on randomly selected newly diagnosed type 2 diabetes mellitus cases coming to the Department of Medicine, Padmashree Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune.

The period of data collection was spread over one and half year months from October 2017 to March 2019. After collection of data, the data entry forms were checked for their completeness and missing and incomprehensible data was rechecked from the respective participant profile. Data entry was done in MS Excel data sheet. This procedure was conducted over the period of 2 months. The data cleaning and the retrieval of the missing data were done over a period of one month. The collected data was analyzed over a three-month period and the report writing was completed by end of Oct 2019.

100 randomly selected newly diagnosed type 2 diabetes mellitus who attend Medicine department were included in the study. Patients were included in the study after taking their voluntary informed consent.

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Inclusion criteria

- Type 2 diabetes mellitus patients
- Male or female of
- Age > 40 years irrespective of disease duration

Exclusion criteria

- Type 1 diabetes mellitus patients
- Gestational diabetes mellitus patient

Results:

Table 1 : Age wise distribution of cases

Age group (in years)	Frequency	Percent
41-50	32	32.0
51-60	47	47.0
61-70	21	21.0
Total	100	100.0

The above table shows the age distribution of cases. It was seen that 32 (32.0) cases were between 41-50 years, 47 (47.0) cases were between 51-60 years and 21 (21.0) cases were between 61-70 years of age.

Mean age of the patients was 54.32 year (standard deviation 7.12 years). Age of the patients ranged from minimum 42 year to maximum 70 year.

Table 2 : Sex wise distribution of study subjects

Gender	Frequency	Percent
Male	62	62.0
Female	38	38.0
Total	100	100.0

The above table shows distribution of cases according to gender. In the study subjects, out of 100, 62 (62.0) were male while remaining 38 (38.0) were female.

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Table 3 : Anthropometric measurement of study subjects (n=50)

Variable	Minimum	Maximum	Mean	Std. Deviation
Weight (kg)	52	88	68.22	9.27
Height (cms)	141	183	160.73	10.16
BMI	21.46	35.50	27.21	3.43
WHR	0.82	1.27	1.04	0.15

It was seen that mean weight of cases was 68.22 ± 9.27 kg, mean height of cases was 160.73 ± 10.16 cm, mean BMI of cases was 27.21 ± 3.43 and mean WHR of cases was 1.04 ± 0.15.

Table 4 : Distribution of study subjects according to BMI categories

BMI Categories	Frequency	Percent
Normal BMI (18.50-24.9)	16	16.0
Overweight (25.0 – 29.9)	36	36.0
Obese (More than 30)	48	48.0
Total	100	100.0

The above table shows distribution of cases according to BMI categories. It was observed that 16 (16.0) cases were Normal BMI (18.50-24.9), 36 (36.0) cases were Overweight (25.0-29.9) and 48 (48.0) cases were Obese (More than 30.0).

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Table 5 : Duration of diabetes mellitus

Duration	Frequency	Percent
0-4 years	13	13.0
5-9 years	56	56.0
10-14 years	25	25.0
15 and above	6	6.0
Total	100	100.0

The above table shows distribution of cases according to duration of diabetes mellitus. It was observed that 13 (13.0) cases were 0-4 years, 56 (56.0) cases were 5-9 years, 25 (25.0) cases were 10-14 years and 6 (6.0) cases were 15 and above.

Table 6 : Distribution of study subjects according to Waist Hip Ratio Risk Category

Waist Hip Ratio Risk Category	Frequency	Percent
Normal Cardiac Risk (<0.9 for M and <0.85 for F)	29	29.0
Increased Cardiac Risk (≥0.9 for M and ≥0.85 for F)	71	71.0
Total	100	100.0

The above table shows distribution of cases according to Waist Hip Ratio Risk Category. It was observed that 29 (29.0) cases were having Normal Cardiac Risk (<0.9 for M and <0.85 for F) and 71 (71.0) cases were having Increased Cardiac Risk (≥0.9 for M and ≥0.85 for F).

Table 7 : Distribution of cases according to presence of Hypertension

Hypertension	Frequency	Percent
Present	41	41.0
Absent	59	59.0
Total	100	100.0

The above table shows distribution of cases according to presence of Hypertension. It was observed that 41 (41.0) cases had hypertension and 59 (19.0) cases did not had hypertension.

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Table 8: Distribution of cases according to duration of hypertension

Duration	Frequency	Percent
1 year	3	7.3
2 year	15	36.6
3 year	10	26.5
4 year	8	11.8
5 year	5	8.8
Total	41	100.0

The above table shows distribution of cases according to duration of hypertension. It was observed that in 3 (7.3) case had hypertension from one year, 15 (36.6) cases had hypertension from two year, 10 (26.5) case had hypertension from three year, 8 (11.8) case had hypertension from four year and 5 (8.8) case had hypertension from five year.

Discussion:

It was seen that 32 (32.0) cases were between 41-50 years, 47 (47.0) cases were between 51-60 years and 21 (21.0) cases were between 61-70 years of age. Mean age of the patients was 54.32 year (standard deviation 7.12 years). Age of the patients ranged from minimum 42 year to maximum 70 year. In a study done by Wani FA et al. ,[4] mean age of the patients was 53.4 ± 21.5 years which is similar to findings of our study.

In the study subjects, out of 100, 62 (62.0%) were male while remaining 38 (38.0%) were female. In a study done by Wani FA et al. ,[4] out of 100, 56 (56.0%) were male while remaining 38 (38.0%) were female which is comparable to findings of our study.

It was observed that 13 (13.0) cases had diabetes since 0-4 years, 56 (56.0) cases were 5-9 years, 25 (25.0) cases were 10-14 years and 6 (6.0) cases were 15 and above.

It was seen that mean weight of cases was 68.22 ± 9.27 kg, mean height of cases was 160.73 ± 10.16 cm, mean BMI of cases was 27.21 ± 3.43 and mean WHR of cases was 1.04 ± 0.15. In a study done by Jain SK et al. ,[5] mean BMI of study participants was 27.± 12.2 kg/m^2 which almost similar to findings of our study.

In the present study, it was observed that 16 (16.0) cases were Normal BMI (18.50-24.9), 36 (36.0) cases were Overweight (25.0-29.9) and 48 (48.0) cases were Obese (More than 30.0). In a study done by Wani FA et al. ,[78] 30 (30.0) cases were Normal BMI (18.50-24.9), 50 (50.0) cases were Overweight (25.0-29.9) and 20 (20.0) cases were Obese (More than 30.0). These findings are in the contrary to my findings.

It was observed that 29 (29.0) cases were having Normal Cardiac Risk (<0.9 for M and <0.85 for F) and 71 (71.0) cases were having Increased Cardiac Risk (≥0.9 for M and ≥0.85 for F).

It was observed that 41 (41.0) cases had hypertension and 59 (19.0) cases did not had hypertension. It was observed that in 3 (7.3) case had hypertension from one year, 15 (36.6) cases had hypertension from two year, 10 (26.5) case had hypertension from three year, 8 (11.8) case had hypertension from four year and 5 (8.8) case had hypertension from five year.

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It was observed that mean fasting blood sugar of cases was 136.81 ± 8.249 g/dl, mean 2 hour blood sugar of cases was 221.47 ± 13.954 g/dl, mean HbA1c of cases was 9.42 ± 3.14 %, mean HDL of cases was 42.36 ± 6.861 mg/dl, mean LDL of cases was 172.63 ± 19.617 mg/dl, mean Triglyceride of cases was 186.32 ± 23.511 mg/dl and mean cholesterol of cases was 198.51 ± 21.517 mg/dl.

Conclusion:

Prevalence was higher in male gender, hypertensive persons, obese person, deranged WHR, deranged glycemic control, dyslipidemia.

References:

1. Orasanu G, Plutzky J. The pathologic continuum of diabetic vascular disease. J Am Coll Cardiol. 2009;53(5 Suppl):S35–42.
2. International Diabetes Federation. IDF Atlas. 7th edition. Available from: http://www.diabetesatlas.org . Last accessed on 2019 June 27
3. Gudbjörnsdottir S, Eliasson B, Eeg-Olofsson K, Zethelius B, Cederholm J, National Diabetes Register. Additive effects of glycaemia and dyslipidaemia on risk of cardiovascular diseases in type 2 diabetes: an observational study from the Swedish National Diabetes Register. Diabetologia. 2011 Oct 1;54(10):2544.
4. Wani FA, Kaul R, Raina AA, Nazir A, Maqbool M, Bhat MH, Shah PA. Prevalence of microvascular complications in newly diagnosed type-2 diabetes mellitus. Int J Sci Stud. 2016 Jan 1;3(10):102-5.
5. Stratton IM, Adler AI, Neil HA, Matthews DR, Manley SE, Cull CA, Hadden D, Turner RC, Holman RR. Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35): prospective observational study. Bmj. 2000 Aug 12;321(7258):405-12.