

Demographics and clinical characteristics of diabetes mellitus patients in South Indian Tertiary Care Hospital

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Abstract

The main objective of this study was to analyze demographic and clinical characteristics of diabetic patients in a south Indian tertiary care hospital. The study was carried out in tertiary care hospital for a period of three months. All the patients were evaluated thoroughly and included in the study. Our study found that diabetes is more prevalent in middle age group people. Males are more predominant when compared with females. Most of diabetic

individuals habituated to alcohol habit and most of patients are receiving oral medications when compared with insulin injection. The mean value of age is 58.12 whereas mean value of glucose profile is FBS-173.08 and HBA1C IS 7.15 and RBS is 232.9. statistical analysis showed age, HBA1C, duration of DM, BMI were found to be significant <0.05. hypertension is the most common co morbidity found in DM patients.

Keywords: Diabetes mellitus-1, Random blood sugar-2, Fasting blood sugar-3, HBA1C- Glycosylated Heamoglobin-4

1. Introduction

The aim of the work is to carry out demographic and clinical characteristics of diabetic patients in a tertiary care hospital. Diabetes mellitus is a group of metabolic disorder characterized by high blood glucose (blood sugar) level either due to inadequate insulin production or because the body's cells do not respond properly to insulin or both. The term "Diabetes Mellitus" describes a metabolic disorder of multiple aetiology characterized by hyperglycemia with disturbances of carbohydrate, fat (dyslipidemia) and protein metabolism resulting from defects in insulin secretion, insulin action, or both. The main symptoms are Polyuria (frequent urination), Polydipsia (increased thirst), Polyphagia (increased hunger). The overall prevalence of diabetes between the age of 20-79 years in India (IDF 2019 data) is 8.9 %. This corresponds to total diabetes cases in adults as 77,005,600, and it is expected to reach 100 million by 2030. Among this, 57% are previously undiagnosed diabetes. Presently India contributes to 1 in 6 adults with diabetes in the world. According to WHO in 2019, it is estimated that 1.5 million deaths were directly caused by diabetes and another 2.2 million deaths were attributable to high blood glucose in 2012. A healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use may prevent or delay the onset of type 2 diabetes. Diabetes is a major cause of blindness, kidney failure, heart attacks, stroke and lower limb amputation. The aetiology of diabetes in India is multifactorial and may include genetic factors coupled with environmental influences such as obesity associated with rising living standards, steady urban migration, and lifestyle changes. However, the prevalence and incidence of diabetes mellitus may vary with the geographic distribution of area.

2. Materials and methods

The study was conducted in Manipal hospital after taking approval from the ethical committee. A total of 200 diabetic patients who have informed consent form were included in the study. The study included adults who are previously diagnosed with diabetes. Patients who are less than 20yrs old and women with gestational diabetes were not included in the study. Various demographic and clinical characteristics of every individual who are involved in the study were recorded. In study each participant details like demographic details, health-related behavior, clinical manifestations [co morbidities], duration of DM, and therapy of DM were noted. Variables used in study includes age, gender, smoking, alcohol intake, comorbidity conditions, disease duration, therapy used for DM, FBS, RBS, HBA1C levels.

3. Results

Our study included a total of 200 diabetic patients

Table 1: Age wise frequency distribution of individuals with DM

S. no	Age group	DM[n=200] %
1	20-40	16[8]
2	41-60	100[50]
3	61-80	75[37.5]
4	81-100	9[4.5]

Above table shows that majority of individuals are in age group between 41-60yrs and a smaller number of individuals among 81-100yrs of age.

Table 2: Gender wise frequency distribution among DM

S. no	Gender	DM [n=200] %
1.	Male	93[46.5]
2.	Female	104[52]

Table 3: Comparison of social habits among DM

Social Habits	DM [n=200]
Smoking	71
Alcohol intake	89
Smoking+ alcohol intake	52
nil	60

Table 4: Drug therapy for diabetic patient

Drug treatment	DM[n=200]
Oral medications	134[67%]
Insulin therapy	66[33%]

Table 5: Mean, Variance, Standard Deviation of different variables in DM patients

Variables	Mean	Variance	Standard Deviation
Age	58.12	146.439	12.1012
FBS	173.08	1551.41	39.3879
HBA1C	7.15	1.58	1.257
RBS	232.917	9277.106	96.317

Table 6: Statistical analysis using Epi-Info software

Variables	T-Statistic	DF	P-Value	95%CI
DM				
AGE	64.306	199	<0.0001	56.432- 59.8072
HBA1C	47.730	199	0.001	6.9827-7.3173
Duration of DM	117.38	199	0.0001	11.2606- 11.5394
BMI	23.013	199	0.01	19.4662-22.5338

4. Discussion

Diabetes mellitus is a group of metabolic disorders characterized by high blood sugar level for prolonged period of time. Our study found that diabetes is more prevalent in middle age group people. Males are more predominant when compared with females. Most of diabetic individuals habituated to alcohol habit and most of patients are receiving oral medications when compared with insulin injection. The mean value of age is 58.12 whereas mean value of glucose profile is FBS-173.08 and HBA1C IS 7.15 and RBS is 232.9. statistical analysis showed age, HBA1C, duration of DM, BMI were found to be significant <0.05. hypertension is the most common co morbidity found in DM patients. Our study has some limitations as our study has been conducted in tertiary care hospital and may not be representative of general population. Multi center studies should be undertaken in future for better comparison among different population in order to understand changes of disease in world.

5. Conclusion

Diabetes mellitus has become a challenge issue in whole world. Demographic and clinical characteristics should be taken in to consideration. Our study shows that middle age group people are more affected and males are more dominant when compared with females in our study. most of patients are administering oral medications when compared to insulin injection.

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7. Authors contributions

Concept, design, data collection, analysis- Thumma Vineela, Guidance- Prof. Dr. Shaik Abdul Rahaman.

8 Conflict of interest statement

The authors declare no conflict of interest.

9. References

- Ribu L, Hanestad BR, Moum T, Birkeland K, Rustoen T. Health-related quality of life among patients with diabetes and foot ulcers: association with demographic and clinical characteristics. *Journal of Diabetes and its Complications.* 2007; 21(4):227-236.
- Baker RS, Watkins NL, Wilson MR, Bazargan M, Flowers Jr CW. Demographic and clinical characteristics of patients with diabetes presenting to an urban public hospital ophthalmology clinic. *Ophthalmology.* 1998; 105(8):1373-1379.
- Yekta Z, Pourali R, Ghasemi-Rad M. Comparison of demographic and clinical characteristics influencing health-related quality of life in patients with diabetic foot ulcers and those without foot ulcers. *Diabetes, metabolic syndrome and obesity: targets and therapy.* 2011; 4:393.
- Bavuma CM, Musafiri S, Rutayisire PC, McQuillan R, Wild SH. Socio-demographic and clinical characteristics of diabetes mellitus in rural Rwanda: time to contextualize the interventions? A cross-sectional study. *BMC Endocrine Disorders.* 2020; 20(1):1-10.
- MJ SP, Vernet V, Sáez L, Figueras T, Sala F. Socio-demographic and clinical characteristics of a patient population with diabetes mellitus. *Atencion primaria.* 2002; 29(8):474-480.
- Lawrence JM, Joyce P, Black MH, Anderson A, Hood K, Imperatore G, Klingensmith GJ, Naughton M, Mayer-Davis EJ, Seid M, SEARCH for Diabetes in Youth Study Group. Demographic and clinical correlates of diabetes-related quality of life among youth with type 1 diabetes. *The Journal of pediatrics.* 2012; 161(2):201-207.
- Doubova SV, Ferreira-Hermosillo A, Pérez-Cuevas R, Barsoe C, Gryzbowski-Gainza E, Valencia JE. Socio-demographic and clinical characteristics of type 1 diabetes patients associated with emergency room visits and hospitalizations in Mexico. *BMC health services research.* 2018; 18(1):1-11.
- Chaudhary GM, Chaudhary FM, Tanveer A, Din AT, Chaudhary SM, Din AT, Shafi A. Demographic and Clinical Characteristics of 4556 Type 2 Diabetes

- Mellitus Patients at a Tertiary Care Hospital in Southern Punjab. *Cureus*. 2019; 11(5).
9. Faglia E, Clerici G, Scatena A, Caminiti M, Curci V, Prisco M, Prisco V, Greco R, Cetta F, Morabito A. Severity of demographic and clinical characteristics, revascularization feasibility, major amputation, and mortality rate in diabetic patients admitted to a tertiary diabetic foot center for critical limb ischemia: comparison of 2 cohorts recruited at a 10-year distance. *Annals of vascular surgery*. 2014; 28(7):1729-1736.
 10. Assunção A, Campos D, Marques R, Cunha I, Santos P, Martins A, Gonçalves AS, Rebelo A, Lima C, Matos C, Prata AC. The impact of demographic and clinical characteristics on diabetic painful neuropathy. *Romanian Journal of Internal Medicine*. 2020; 58(1):13-19.
 11. Daga R, Naik S, Laway BA, Shakir M, Rafiq W. Demographic and Clinical Characteristics of youth onset Diabetes Mellitus in Kashmir India. *International Journal of Pediatrics*. 2015; 3(4.1):739-747.