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Original Research Article

Prevalence of type two diabetes mellitus in Jammu rural

Sanjeev Kumar[1], Ashima Badyal[2]*

[1]Physicians, Government Sub District Hospital Hiranagar, District Kathua, Jammu and Kashmir, India
[2]Department of Biochemistry, Government Medical College Jammu, Jammu and Kashmir, India

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***Correspondence:**
Dr. Ashima Badyal,
E-mail: badyal.ashima@gmail.com

ABSTRACT

Background: Diabetes Mellitus (DM) represents one of the biggest challenges in our century, affecting hundreds of millions people worldwide, both in developed countries and in developing ones, as well; the main cause being an unhealthy life style: unhealthy food, lack of physical exercise, which most of the times, lead to obesity.
Methods: This study was conducted to estimate the prevalence of DM in various age groups and gender by analyzing the hospital record based data from August 2017- December 2017 at Sub-District Hospital, Hiranagar, Kathua, J and K. Fasting plasma glucose ≥ 126 mg% and random plasma glucose ≥ 200 mg% were taken as the diagnostic criteria for diagnosis of DM.
Results: Out of the 3600 patients screened for DM, majority were in the age group of 41-50 (37.06 %). Net prevalence was found to be 4.7% (170) of the total. Prevalence among females and males was found to be 49.41% and 50.59% respectively. The trend showed prevalence of approximately 6% in the age group of 41-50 and 51-60, but >60 years showed comparatively less prevalence i.e. <5%.
Conclusions: Various studies from time to time have also discussed the most disturbing trend being the shift in age of onset of diabetes to a younger age in the recent years, which could be attributed to changing life-style, even in the rural areas, with a high percentage not knowing that they were suffering from diabetes; therefore, active screening programs are recommended in order to diagnose this condition earlier.

Keywords: Awareness, Diabetes mellitus, Prevalence

INTRODUCTION

Diabetes Mellitus (DM) is a chronic, complex disease, requiring a continuous medical care, with strategies of reducing the multi-factorial risks beyond the glycaemia control.[1] Chronic Hyperglycaemia is associated to lesions, dysfunctions, various organ failure, being the main cause of problems in persons aged between 20-74 years old, and chronic kidney disease require a renal function substitution treatment, the main cause of non traumatic amputations, the sixth cause of death worldwide; every 7 seconds, one person dies because of DM, but DM is also an independent risk factor for cardiovascular (CV)pathology, with a direct impact upon the CV morbidity and mortality.[2-5]

DM is one of the highest priorities in medicine worldwide in the 21st century, the number of patients with DM being in a constant growth, World Healthcare Organization(WHO) estimating hyperglycemias as the third highest risk factor for premature death, after high blood pressure and smoking, as well as one of the highest hazards in our century.[4,6] Ever since 1921, Dr Elliot Joslin appreciated that in the next decades; the number of patients with DM will decades, the number of patients with DM will double.[7] Among the main reasons for DM

Among the main reasons for DM prevalence increase of New cases number, population decay, increase of obesity prevalence as well as the survival increase in patients with DM.[8-11] As the third leading cause of mortality, diabetes seriously threatens to human health worldwide, and it has caused large burden to the patients, their families and the society, especially in developing countries.[12] There are many complications of diabetes such as diabetic eye disease and diabetic nephropathy, which could lead to blindness and kidney failure.[13] In addition, increase the risk of cardiovascular disease.[14] International Diabetes Federation (IDF) atlas seventh edition estimated there were 415 million adults aged 20-70 living with diabetes and 5.0 million deaths were attributed to diabetes globally in 2015.[15]

METHODS

This study was conducted to estimate the prevalence of DM in various age groups by analyzing the hospital record based data from August 2017-December 2017 out of all the patients attending the medicine OPD (Sub-Distt. Hospital, Hiranagar) for any illness, those showing even slightest evidence towards the presence of DM, either because of their presenting signs and symptoms or because of positive family history were screened for DM. Inclusion criteria included the individuals in the age group of 21 and above, willing to participate in the study of either gender. Written informed consent was taken from the patients. Ethical approval was taken from hospital review board. Patients suffering from hyperthyroidism, pancreatitis and the patients taking any medicine which may alter the blood glucose level were excluded. In the current study, enzymatic method was used to test the samples: glucose oxidase (GOD) converts glucose into gluconic acid; Hydrogen peroxide formed in this reaction in presence of peroxide (POD), oxidatively couples with 4-aminoantipyrine/phenol to produce red quinoneimine dye.[16] This dye has absorbance maximum at 505 nm (500-550 nm). The intensity of colour is directly proportional to the glucose in specimen.

Fasting plasma glucose ≥ 126 mg% and random plasma glucose ≥ 200 mg% were taken as the diagnostic criteria for diagnosis of DM.[17]

RESULTS

Out of the 3600 patients screened for DM, 1857 (51.58 %) were males and 1743 (48.42 %) were females. Majority of the patients and people screened were in the age group of 41-50 (37.06 %).

Complete and comprehensive detail about the prevalence and distribution of patients age-wise and gender-wise is given in Table 1.

Table 1: Age-wise; gender-wise, prevalence amongst patients screened for DM (n= 3600).

Age group (in years)		21-30	31-40	41-50	51-60	>60	Total	Remarks
Screening for diabetes mellitus (n= 3600)	Males	148	249	621	383	456	1857	x
	M%	45.82	35.57	58.97	64.37	49.09	51.58	x
	Females	175	451	432	212	473	1743	x
	F%	54.18	64.43	41.03	35.63	50.91	48.42	x
	Total	323	700	1054	595	929	3600	x
Patients with DM (n= 170 = 4.7%)	Males	3	7	34	19	23	86	50.59 %
	Females	5	12	29	16	22	84	49.41 %
	Total	8	19	63	35	45	170	100 %
	%	4.17	11.18	37.06	20.59	26.47	1000	x
Patients without DM (n= 3430 = 95.3%)	Males	145	242	587	364	433	1771	51.63 %
	Females	170	439	403	196	451	1659	48.37 %
	Total	315	681	990	560	884	3430	100 %
	%	9.18	19.85	28.86	16.33	25.77	100	

Among the ones found to be having DM, net prevalence was found to be 4.7% (170) of the total. Prevalence among females was found to be 49.41% and among males was found to be 50.59%.

DISCUSSION

The prevalence trend shows that age group of 41-50 and 51-60 was more venerable and affected due to diabetes mellitus, both accounting for approximately 6% of the studied population in the particular age groups (63/1054 and 35/595 respectively). The more elderly population i.e. >60 years showed comparatively less prevalence (45/929), i.e. <5% appox. This variation can be accounted for the change in the diet and life styles in the recent years, with the population in the age group of >40 now falling an easy prey to the disease. Even in the age group of 21-30, 8/323 (approximately 2.5%) is a very alarming figure. Although many studies have focussed on prevalence, awareness, treatment, control and risk factors

amongst the elderly, the results in our study were slightly inconsistent due to the difference in the living regions, economy, culture, occupation, diet and life style; but equally important anyways. Similarly, Mohan V, et al, has also discussed that the most disturbing trend is the shift in age of onset of diabetes to a younger age in the recent years, which could have long lasting adverse effects on nation's health and economy.[18] The study also matched with the findings of Ramachandran A, et al, showing the prevalence to be same in both genders.[19]

In 2015, 673 billion dollars were spent on health expenditure alone, which accounted for 12% of total expenditure. However, the prevalence of type 2 diabetes mellitus (DM) in almost all countries has increased rapidly in recent decades, especially in developing countries.

Due to the fact that most of the countries reported a permanent increase of the DM prevalence and incidence, prevention measures are required for this disease, including optimizing the life style and simultaneous control of body weight. Still a high percentage of the patients actively diagnosed with diabetes did not know they were suffering from diabetes, therefore, active screening programs are recommended in order to diagnose this condition earlier. Irreversible chronic complications in patients with uncontrolled diabetes mellitus, complications leading not only to poor life quality but also to a 2-5 times increase of expenses, represent arguments that support the tight follow up of these patients for the rest of their lives.

CONCLUSION

Epidemological studies have confirmed that T2DM prevention and control were crucial to postpone or decrease in its incidence related complications and its financial burden. Nevertheless, the awareness, treatment and control of T2DM were disproportionately low; almost half of people with this disease were undiagnosed all over the world.

Comprehensive evaluation of T2DM epidemiology, benefit the prevention, awareness and control of diabetes mellitus. Generally speaking, enhancing education level, moderate physical activity and good body weight control could reduce the risk of T2DM.

Therefore, attention should be paid to healthy life styles to reduce the prevalence and improve awareness, treatment and control of T2DM. The earlier the diagnosis is made, the higher the chance to prevent multiple and expensive complications.

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