



To Correlate the Blood Sugar Level with Age in Diabetic Patients

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Abstract

Diabetes mellitus is a group of disease characterized by high blood glucose concentration in the blood and alteration in carbohydrate, protein and fat metabolism. People are greater risk of diabetes due to improper dietary practice, unhealthy life style, lack of physical exercise. The present study was conducted to correlate the blood sugar level with age in diabetic patients. multistage stratified sampling technique was used for selecting 100 samples in both male and females and an interviewed scheduled was evolved to collect information regarding socio-economic profile, dietary pattern etc. dietary intake between male and females diabetic was very highly significant but age, BMI, Nutrients Intake etc. between male and females diabetic were insignificant.

Keywords: Age, Body Mass Index, Diabetes mellitus, Fasting Glucose.

Introduction

Diabetes mellitus is a chronic metabolic disorder that prevents the body to utilize glucose completely or partially. It is characterized by high blood glucose concentration in the blood and alteration in carbohydrate, protein and fat metabolism. This can be due to failure in the formation of insulin. Observational studies addressing physical activity, weight loss, and dietary intake of whole grains and fiber etc. provided evidences for factor that might delay or prevent Type-2 diabetes¹. Prevalence of Type 2 diabetes has increased dramatically with 1 million people reported to have been diagnosed with Type 2 diabetes in 1994, increasing to 382 million by 2013, and with prediction of 592 million by 2035 Type 2 diabetes is responsible for the deaths of approximately 1.5 million people annually and is a risk factor for cardiovascular

disease (CVD), which kills 13 million people worldwide each year, accounting for 25% of all deaths, thereby increasing the economic burden within global healthcare systems⁹. People are greater risk of diabetes due to improper dietary practice, unhealthy life style, socioeconomic situation, mental stress and lack of physical exercise^{2,10}. Too much fat especially saturated from meat or dairy product contains too much sugars calories, and not enough whole grains, fruits and vegetables are the primary dietary problem challenging the population. The present study was conducted to correlate the blood sugar level with age in diabetic patients.

Material and Methods

The study is carried out in 100 diabetic male and female diabetic subjects from local hospitals from Agra city. Multistage stratified random sampling

technique was used in the selection of samples. In this study relevant information regarding socio-economic profile, dietary pattern etc. From the patient using the predesigned schedules was collected. The study is carried out under the following objectives:

1. To assess the health status through BMI in male and female diabetic patients aged between 30- 50 years and above.
2. To correlate the blood sugar level with age among male and female diabetic patients.

Statistical analysis was performed to find out the effect of all factors on diabetes with the help of mean SD, t-test and to see the significance at 5% level. Correlation coefficient was also applied to assess the relationship between blood sugar level and exercise.

Result and Discussion

Results and discussion of our study is summarized below:

Table 1 Distribution of male and female diabetic patients according to age

Age in Years	Sex of the respondents			
	Male		Female	
	No.	%	No.	%
30-35	7	14.0	8	16
35-40	5	10.0	13	25.00
40-45	10	20.0	27	51.92
45-50	13	26.0	5	9.61
50 and above	15	30.0	2	3.84
Total	50	100.0	50	100.00

Table-1 reveals the distribution of male and female respondent according to age. Out of 50 male diabetic patients, majority of them (30.00%) were in the age group of 50 yrs and above, followed by 26.00% in the age group of 45-50 yrs and the minimum 10.0% in the age group of 35-40 years. Out of the female diabetic patients, majority of them (28.0%) were in the age group of 35-40

years, followed by 22.0% were in the age group of 45-50 years and the minimum 14.0% were in the age group 40-45 yrs. WHO report ted that most of the surveyed population (60%) and diabetic patient (54.8%) are in the age group of 30-45 years. it shows diabetes in young adult is common.

Table 2 Distribution of the Male and female respondents according to body mass index

Body Mass Index	Sex of the respondents			
	Male		Female	
	No.	%	No.	%
20-25	10	20.00	27	54.00
25-30	37	74.00	22	44.00
30 and above	3	6.00	1	2.00
Total	50	100.00	50	100.00

Above table highlights the distribution of Male and female respondents according to body mass index. Out of the 50 male diabetic patients, majority of them (74.00%) were having the body mass index of 25 – 30 kg., followed by 20.00% having the body mass index of 20-25and the minimum (6.00)were having the body mass index of 30 and above. Out of the female diabetic

patients, majority of them (54.00%) were having the were having the body mass index of 20 – 25, followed by 44.00% having the body mass index of 25-30and the minimum (2.00)were having the body mass index of 30 and above.^{3,4,5}.

Table 3 Distribution of the Male and female respondents according to fasting blood sugar level

Blood sugar level (mg/dl)	Sex of the respondents			
	Male		Female	
	No.	%	No.	%
80-90	0	0.0	2	4.0
90-100	4	8.0	7	14.0
100-110	2	4.0	7	14.0
110-120	5	10.0	6	12.0
120-130	12	24.0	11	22.0
130-140	6	12.0	8	16.0
140-150	8	16.0	7	14.0
150 and above	13	26.0	2	4.0
Total	50	100.0	50	100.0

Table-3 reveals the distribution of the Male and female respondents according to blood sugar level. Out of 50 diabetic patients, majority of them (26.00%) were having the fasting blood sugar level of 150 and above, followed by 24.00% blood sugar level of 120 -130 and the minimum 4.00%. having the fasting blood sugar level of 100 -110. Out of the female diabetic patients, majority of

them (22.0%) were having the fasting blood sugar level of 120 -130 followed by 16.00% having 130 -140 blood sugar level of and the minimum 4.00%. having the fasting blood sugar level of 150 and above, & 80 – 90 respectively. This difference might be occurred due to performing exercise, restricted diet and taking proper medicine.

Table 4 Distribution of the Male and female respondents according to blood sugar level after 2 hours

Blood sugar level (mg/dl)	Sex of the respondents			
	Male		Female	
	No.	%	No.	%
100-110	1	2.0	2	4.0
110-120	0	0.0	2	4.0
120-130	4	8.0	1	2.0
130-140	1	2.0	9	18.0
140-150	4	8.0	6	12.0
150 -160	3	6.0	5	10.0
160 -170	6	12.0	1	2.0
170-180	7	14.0	3	6.0
180 -190	5	10.0	8	16.0
190 and above	19	38.0	13	26.0
Total	50	100.0	50	100.0

Table-4 reveals the distribution of the Male and female respondents according to blood sugar level. Out of 50 diabetic patients, majority of them (38.00%) were having the blood sugar level after 2 hrs of 190 and above, followed by 14.00% blood sugar level of 170 -180 and the minimum 2.00%. having the blood sugar level after 2 hrs of 130 -

140 of 100 -110 respectively. Out of the female diabetic patients, majority of them (26.0%) were having the blood sugar level after 2 hrs of 190 and above followed by 18.00% having 130 -140 blood sugar level of and the minimum 4.00%. having the fasting blood sugar level after 2 hrs of 120 -130 and 160 -170 respectively.

Table 5 Correlation between age with blood sugar levels among male diabetic patients

Parameter	Statistical Values				
	Mean	SD	r	t	p
Age	44.40	7.54			
Fasting Blood sugar Level	140.84	37.36	+0.044	0.305	>0.05
After 2 hrs Blood sugar Level	188.08	46.31	+0.155	1.057	>0.05

Above table highlights the correlation between blood sugar level (Fasting & pp) with age³ of the male diabetic patients. Statistically, positive and insignificant correlations were observed between

age of the male diabetic patients with blood sugar level (Fasting) and blood sugar level (pp) even at 5% level of significance.

Table 6 Correlation between BMI with blood sugar level among female diabetic patients

Parameter	Statistical Values				
	Mean	SD	r	t	p
Age	42.28	6.86			
Fasting Blood sugar Level	120.48	19.87	+0.185	1.304	>0.05
After 2 hrs Blood sugar Level	172.92	45.52	+0.399	3.015	<0.05

Above table highlights the correlation between blood sugar level (Fasting & pp) with age of the female diabetic patients. Statistically, significant correlations was observed between age of the female diabetic patients with blood sugar level (pp) <0.05 at 5% level of significance. However positive and insignificant correlation was observed between age of the female diabetic patients with blood sugar level (fasting) even at 5% level of significance. Mohen J. J et al. 2011 reported that an increase in fasting plasma glucose in the normal range is associated with an increase in the incidence of IGT (Impaired glucose Tolerance)⁸.

Conclusion

From the study it is evident that nutritional status of both male and female diabetic patients were highly significant but contrary the results like age, blood sugar level, food habit profile etc. in both diabetic patients showed insignificant. Diabetes is a serious health condition that affects men and women in all ages. The main causes of diabetes vary from obesity, poor nutritional status, poor diet and lack of exercise, family history and genetics etc. From the above observations, it can be concluded that exercise affects the blood sugar level in male as well as female respondents. Thus, it can be prevented by doing regular exercise, a proper treatment, effective dietary intake, proper day schedule.

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