TAJ December 2014; Volume 27 Number-2

ISSN 1019-8555
The Journal of
Teachers Association
RMC, Rajshahi

Original Article

Glycemic status of diabetic patients attending in a diabetic hospital

MN Huda[1], MN Islam[1], Towfiq I[2], SM Alam[3], PM Basak[1], A Sarkar[4], PM Bhatachariya[5]

Abstract

Diabetes care is now available everywhere in our country. But achievement of optimal level glycemic control and adherence to diabetic therapy is still questionable. This observational cross sectional study was done to observe the glycemic status of diabetic patients .The mean (±SD) serum HbA1c concentration of total subjects (n=100) was 7.84±2.0 with a range of 4.8-15.1%. The mean serum HbA1c concentration in group-1 subjects was 5.9±0.587% with a range of 4.8-6.9%, in group-2 subjects was 7.44±0. 304% with a range of 7.0-7.9%, in group-3 subjects was 9.55±1.52% with a range of 8.1-15.1%. Statistically significant difference (p=.001) was observed on serum HbA1c values in between the groups of subjects. Glycemic control was not satisfactory of these diabetic patients. Awareness and motivation through counseling and identifying certain factors influencing glycemic control might be able to overcome this situation.

TAJ 2014; 27: No-2: 33-35

Introduction

The worldwide prevalence of diabetes mellitus has risen dramatically over the past two decades and specially the prevalence of type 2 diabetes mellitus is expected to rise more rapidly in the future because of increasing obesity and reduced activity levels.[1] Diabetes registry in the different referral centers of our country proves the rapid increase of diabetes prevalence in our country. This increasing frequency of diabetes registry appears to be either increasing awareness of diabetes among people or a real increase in diabetes prevalence in the community. A good number of diabetic subjects of Rajshahi division attend Rajshahi diabetic hospital daily. It is our unique advantage to study the glycemic control of these patients which we hope, will give further information in the management of diabetic patients in future.

Methodology

This descriptive-Cross-sectional study was done among 100 diabetic subjects in Rajshahi Diabetic Association, Rajshshi. One hundred known diabetic subjects (duration of diabetes is at least one year), registered at Rajshahi Diabetic Association and attending in the out-patient department of this hospital were included in this study. Serum HbA1c was measured by Nyco card HbA1c reader. Standardization of Nycocard HbA1c at DCCT level is carried out according to IFCC recommendations. Its measuring range is 3-18% of HbA1c and reference range is 4.5-6.3 %. On the basis of HbA1c concentration, patients were divided into three groups.[18] Group 1: Good control (serum HbA1c level less than 7%), Group 2: Moderate control (serum HbAlc level 7%-8%), Group 3: poor control (serum HbA1c level more

[1] Assistant Professor, Department of Medicine, Rajshahi Medical College.
[2] Senior consultant, (Medicine) Sadar Hospital, Chapai Nawabgong.
[3] Senior consultant, (Medicine) Sadar Hospital, Pabna.
[4] EMO, Rajshahi Medical College Hospital.
[5] Resident Physician, Medicine, Rajshahi Medical College Hospital, Rajshahi.

than 8%). Data were computed and analyzed by SPSS V-12 software.

Result

Mean age (±SD) of total study subjects was 50.55±12.5. Male to female ratio was 1.02:1. Mean (±SD) serum HbA1c concentration of total subjects (n=100) was 7.84±2.0 with a range of 4.8-15.1%. The mean serum HbA1c concentration in group-1 subjects was 5.9±0.587% with a range of 4.8-6.9%, in group-2 subjects was 7.44±0. 304% with a range of 7.0-7.9%, in group-3 subjects was 9.55±1.52% with a range of 8.1-15.1%. Statistically significant difference (p=.001) was observed on serum HbA1c values in between the groups of subjects (Table-1)

Discussion

Serum HbA1c level was taken as a parameter of glycemic control for over past 2-3 months instead of single fasting or post prandial blod glucose level due to the fact that fasting blood glucose measurements could be spuriously lowered in to the "good control" range by patients dieting just before a clinic visit. In this study, 45% of subjects were in the age range of 46-60 yrs being highest, 37% in the age range of 30-45 yrs and 18% were above 60 yrs. This is almost consistent with the report of Sarker AM[125] who showed the highest (48.8%) number of patients were in the age group of 30-45 years. Sayed et al[126] also observed the highest (75%) number of registered diabetic subjects were in between 30-59 years age. Male and female subjects were almost equally distributed with no statistical significance of difference (p=0.59) in between the groups of subjects. This indicates that no influence of sex on glycemic control. This finding is consistent with the findings of Borch-Johnsen et al,[127] where they found unexplained male preponderance diabetic nepropathy and proliferative retinopathy, though there were no systemic glycemic difference between male and females. However, study with large sample size would give a conclusive evidence regarding role of sex on glycemic control. Glycemic status of the study subjects revealed a disappointing result. Only 36% subjects achieved good glycemic control (group-1) and near half (45%) of the subjects showed poor glycemic control (group-3). Despite optimal medical facilities and good counseling offered by this diabetic centre, a majority subjects were remained in poor glycemic status which would be questionable. Multiple factors such as food habits, dietary adherence, and physical exercise and treatment modalities have been found that can influence the glycemic status of diabetic patients. Identification of these factors should be individualized and regular motivational program during counseling should be given along with treatment in each patient.

Conclusion

Diabetic mellitus is a chronic, expensive and debilitating disease which is associated with a range of severe complications. However achievement of optimal glycemic control remains a major challenge to health care providers. Identifications of factors that determine glycemic control may help healthcare providers to manage these subjects effectively.

Table 1. Serum HbA1c level in three groups of subjects (n=100)

SUBJECTS		SERUM HbA1c IN PERCENTAGE		
Groups	Glycemic status	Reference range	Range in patients	Mean ± SD
1 (n=36)	Good control	<7	4.8-6.9	5.9 ± 0.587
2 (n=19)	Moderate control	7-8	7.0-7.9	7.44 ± 0.304
3 (n=45)	Poor control	>8	8.1-15.1	9.55 ± 1.52

Table 2. Age distribution in three groups of total subjects (n=100)

SUBJECTS	AGE IN YEARS						Mean ± SD
		30-45		46-60	>60		
Groups	Glycemic control	N	%	N	%	N	%	
1 (n=36)	Good	11	(30.5)	17	(47.2)	08	(22.2)	52.11± 11.53
2 (n=19)	Moderate	06	(31.5)	09	(47.3)	04	(21)	51.37 ± 11.96
3 (n=45)	Poor	20	(44.4)	19	(42.2)	06	(13.3)	48.96 ± 12.55
Total n=100		37	(36)	45	(45)	18	(19)	50.55 ± 12.05

Table 3. Sex distribution in three groups of subjects (n=100)

SUBJECTS		SEX			
Groups	Glycemic status	Male		Female	
		N	%	N	%
1 (n=36)	Good control	20	(55.5)	16	(44.4)
2 (n=19)	Moderate control	13	(68.4)	06	(31.5)
3 (n=45)	Poor control	25	(55.5)	20	(44.4)
Total n=100 (100%)		58	(58)	42	(42)

References

1. Libby P. Diabetis Mellitus. In: Kasper D, Fouci AS, Longo D, Brounwald E, Houser S, Jamerson JL.(eds). Harrison's principles of Internal Medicine. Mc Grow Hill companies Inc 2005;2150-2153.
2. Rajshahi Diabetes Association. News Bulletin 2005.
3. Sarkar AM. Factors affecting Glycemic control in NIDDM subjects. MD Thesis. BIRDEM Academy 1996.
4. Sayeed MA, Hussain MZ, Istiaque MZ, Islam MA and Azad Khan AK. Characteristics of the diabetic subjects: BIRDEM diabetes registry, 1986.JDAB 1995, 23:25-36
5. Borch-Johnsen K, Nissen H and Salling N. The natural history of insulin dependent diabetes in Denmark; Long-term survival-Who and why. Diabetic Med 1987; 4:211-16

All corresponds to
Dr. Nazmul Huda
Assistant Professor
Department of medicine
Rajshahi Medical college
Email.nazmul811653@yahoo.com