Students' Corner

Knowledge of Type 2 Diabetic Patients about their illness: Pilot project

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Abstract

Objective: To evaluate the baseline level of knowledge and awareness of diabetic patients about their disease and it's complications.

Methods: It was a Cross Sectional Survey conducted at Foundation Clinic, Shifa College of Medicine, Islamabad, in April 2004. A structured questionnaire was used. Forty diabetic patients were interviewed to know their knowledge attitude and practices about diabetes. All data was entered into SPSS version 10.0. The data was re-validated and analyzed.

Results: Mean age of study participants was 45.35 ± 13.05 years, 11(27.5%) were male and 29(72.5%) were female. The mean BMI of the study participants was 27.06±6.29 kg/m^2. Majority of the patients 27(67.5%) had type 2 diabetes. The mean fasting blood sugar was 159±73.89 mg/dl and random blood sugar was 200±91.2 mg/dl, 50% of the patients were using antidiabetic drugs regularly and only 15% of the patients were regularly monitoring their blood glucose at home using a glucometer. Awareness level of the study participants was low.

Conclusion: The awareness about the disease in majority of diabetic patients was not adequate in this study. Routine individual teaching and counseling represents an effective educational model (JPMA 55:221;2005).

Introduction

The prevalence of diabetes mellitus worldwide has increased dramatically during the past few decades. Type 2 diabetes has experienced a steep rise in incidence with over 90% of cases, being of this type. In 1995, Pakistan had an estimated 4 million diabetics. For 2025, it is projected that, if no interventions are made, the country will have the fourth highest prevalence in the world, with 15 million, diabetics.[1]

The mortality rates for patients with type 2 diabetes remain high. The solution is not in better thrombolytic therapy, laser treatment and dialysis services, but to decrease the complications of this silent killer by normalizing blood glucose levels, controlling dyslipidaemia and reducing blood pressure.[2]

The education of diabetic patients, proposed as an essential therapeutic tool since the early 1920s, has generated great enthusiasm over the last decade, with increasing concern for greater effectiveness by improved motivation of both patients and doctors. Structured education depends on the precise definition of agreed, short-term objectives, whose attainment shall be verified. Educational objectives may be set at different levels: knowledge of the disease, skills required for treatment and capacity to integrate therapy in everyday life. Patients' motivation to learn and adhere to treatment is also greatly influenced by individual factors, both psychological and

environmental, that need to be taken into account.[3] However, in many countries, only a minority of patients receive diabetes education.

Diabetic health education day was held in April 2004 at Shifa College of Medicine, as a pilot project. Questionnaire survey was done followed by individual health education program by students of the College. Information brochures were distributed to the patients and their blood glucose was checked.

The objective of this study was to evaluate the baseline level of knowledge and awareness of diabetic patients about their disease and it's complications. The results of this pilot project obviate the need of a larger study which could monitor and evaluate the effects of Health education on long term management of diabetic patients.

Methods

A Cross-Sectional survey (Pilot study) was carried out at Foundation Clinic, Shifa College of Medicine, Islamabad in April, 2004. Pre-designed pretested questionnaire was used for the survey. We interviewed 40 diabetic patients in order to know their knowledge attitude and practices about diabetes. Since this was a pilot project, so the number of study participants were forty. Blood samples were taken from the participants after the survey for blood glucose estimation. This was followed by a Health Education session in small groups for all the study participants, carried out by Medical students with prior training. Information brochures and leaflets were also distributed among the study participants.

All data was entered in to SPSS (Statistical package for Social Sciences) version 10.0. The data was re-validated and analyzed. Institutional Ethical Committee approval was obtained and informed written consent was taken from the study participants.

Results

Mean age of study participants was 45.35 ± 13.05 years, 11(27.5%) were male and 29(72.5%) female. The mean BMI of the study participants was 27.06±6.29 kg/m^2. According to International standards of BMI ≥25 is considered overweight, 25-29.9, pre-obesity and BMI ≥30 obesity.[4] So majority of the study participants were overweight.

The mean fasting blood sugar level was 159±73.89 mg/dl and random blood sugar was 200±91.2 mg/dl. The biochemical profile of the study participants is shown in Table 1.

Majority of the patients 27(67.5%) had type 2 diabetes while 11(27.5%) did not have knowledge about the type of their diabetes. Hypertension was present in 37.5% of the study participants and 21 (52.5%) had family history of diabetes. Sedentary life style was noted in 21(52.5%) of the diabetics.

Table 1. Bio-physical profile of the study participants (n=40).

	Mean±S.D	Range
Blood pressure systolic	135.50±19.50	110.00-190.00
Blood pressure diastolic	84.00±14.42	40.00-120.00
Pulse rate	78.30±11.50	60.00-104.00
Respiratory rate	18.04±2.49	12.00-24.00
Your last RBS (mg/dl)	249.66±104.44	116.00-473.00
Your last FBS (mg/dl)	186.08±65.98	95.00-333.00
Fasting blood sugar level of patients on the day of survey (n=21) (mg/dl)	159±73.89	70.00-342.00
Random blood sugar level of patients on the day of survey (n=19) (mg/dl)	200±91.2	88.00-346.00

Diet alone was the therapy in 10 (24%) patients. Most were on oral hypoglycemics 26 (66%), only 4 (10%) patients were on Insulin. Some patients 8 (20%) were also using herbal or homeopathic medicines, along with allopathic medication. Oral hypoglycaemic agents were being used regularly by 50% patients and only 15% were regularly monitoring their blood gluclose by a glucometer.

Awareness level of the study participants was low. Only 6 (15%) of the study participants could correctly state their fasting blood sugar level. Knowledge about HbA1c was poor. Only 4 (10%) ever had their HbA1c level checked and only one patient could tell the normal reference level of HbA1c. Knowledge about the complications of diabetes such as heart attack, stroke, eye and foot complications was less than 50% (Table 2).

Discussion

Diabetes education is widely accepted as integral to diabetes therapy within the diabetes community.[5-7] In this study awareness level of the study participants was low, which is in accordance with other studies.[8,9] Priority is given by WHO for the development of diabetes education program in many areas to give patients a better knowledge of their disease. In order to prevent premature morbidity and mortality associated with diabetes awareness and educational programmes should be promoted.[10]

Diabetes is highly prevalent with seventy five percent of patients presenting with one or more complications like diabetic ketoacidosis, hypertension, angina pectoris, myocardial infarction, cerebrovascular accident, retinopathy, nephropathy, neuropathy and peripheral vascular disease.[11] Stroke remains a leading cause of death world-wide and diabetes mellitus is a potent risk factor for stroke.[12]

Table 2. Awareness level of diabetics.

	Frequency	Percentage
What is normal FBS level		
Correct	6	15
Incorrect	34	85
What is normal HbA1c level		
Correct	1	2.5
Incorrect	39	97.5
HbA1c ever measured		
Yes	4	10
No	36	90
Source of information regarding DM		
Doctor	30	75
Other	10	25
Should fresh fruits be taken by diabetics?		
Yes	19	47.5
No	9	22.5
Don't know	12	30
Do you know about complications of DM		
Heart attack		
Yes	21	52.5
No	19	47.5
Stroke		
Yes	12	30
No	28	70
Eye complications		
Yes	21	52.5
No	19	47.5
Kidney problems		
Yes	17	42.5
No	23	57.5
Foot problem		
Yes	21	52.5
No	19	47.5
Toe Nail		
Yes	14	35
No	26	65
Fear of complications		
Frequently	11	27.5
Occasionally	11	27.5
Never	18	45

risk factor for stroke.[12] Among our study participants 50% had knowledge about the complications of diabetes such as heart attack, stroke, blindness and foot complications.

Patients should be informed about the necessity of receiving periodic ocular examination even if they do not yet have retinopathy[13] so that it could be diagnosed as early as possible, which is the cardinal component of Secondary Prevention. Standard foot care should be practiced in order to reduce the incidence of lower-extremity problems, such as diabetic foot.[14]

Awareness level of the study participants was low. Only 6(15%) of the study participants could correctly mention their fasting blood sugar level. HbA1c measurements in diabetic patients is a routine practice and regular measurement of HbA1c leads to improved metabolic control.[15] Our study participants were not familiar with this name and a large number of patients never had a HblAc test.

Patient drug compliance was poor in our survey which was reflected by the fasting and random blood sugar levels done on the same day. In one study diabetic patients who received educational training (mean age, 57.0 years, ± 8.9 years) improved their glycemic control, from 189 ± 79 mg/dL to 157 ± 48 mg/dL ($P < 0.05$), and glycosylated hemoglobin (HbA1c) from 11.3% ± 2.4% to 9.7% ± 2.3% ($P = 0.05$). There were no significant changes in body weight or lipid profile, except for triglycerides, which declined ($P < 0.05$).[16]

Our data suggests that majority of the diabetic individuals had never received education on diabetes. The role of diabetic education is clearly defined in the standards of care adopted by the Pakistan Diabetic Association. Promoting education on the disorder will not only reduce the burden of complications but would be cost-effective and would improve the quality of life of such people.

Conclusion

The awareness about the disease in majority of diabetic patients was inadequate in this study. Studies have shown that dissemination of information regarding diabetes through health education program is associated with good metabolic control and prevention of complications associated with it. It is recommended that individual teaching and counseling is an effective education model. The results of this pilot study warrant a full fledged programme of health education for diabetic patients in clinical practice.

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