STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF TYPE 2 DIABETES PATIENTS AT A TERTIARY HOSPITAL IN THE AWADH REGION OF NORTH INDIA

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ABSTRACT

BACKGROUND

Poor Knowledge and practices of diabetes can lead to progression of disease related complications, which can be prevented by proper education and patient involvement.

AIMS AND OBJECTIVE

To evaluate knowledge, self care practices and attitude of patients towards the disease in type 2 diabetes mellitus.

MATERIALS AND METHODS

The present study was done at dept. of medicine, mayo institute of medical sciences, Barabanki between Oct., to Dec., 2015. The study included 100 type 2 diabetes mellitus (T2DM) patients of varying duration. Patient's knowledge, their self-care practices and attitude towards the diabetes were investigated using preapproved questionnaire.

RESULTS

Mean age of study population was 53.84±9.49 years with 54% men and 46% women. Most of the patients (53%) had good formal education, 45% patient's had family history of diabetes whereas 48% had acceptable glycaemic control. Most of the patients in present study showed a significant knowledge related to symptoms of diabetes, symptoms of hypoglycaemia, condition leading to hypoglycaemia, life study modification whereas many had poor knowledge regarding normal fasting level, insulin therapy, the proper way of mixing, right time to take insulin injection, diet plan, diet during infection, compromised immunity in diabetes and regular exercise program. Most of the patients were following good diabetes practice and 75% had positive attitude towards the disease.

CONCLUSION

The present study had showed that patients who regularly followed self-care practices and had sound knowledge regarding the disease, achieved better glycaemic control.

KEYWORDS

Knowledge, self-care practices, type 2 diabetes, glycaemic control.

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INTRODUCTION: T2DM is a chronic metabolic disorder which requires a significant amount of money for the management of diabetes which puts additional burden on the family. Prevalence of T2DM is increasing throughout the world especially in low income countries. The number of diabetic patients is expected to increase to 438 million by 2030 from 285 million in 2010 while in developing countries the number is projected to be doubled. [1]

Patient's education is one of the important parameter for the management of diabetes as proper management requires self-care by the patients. Countless studies have reported that glycaemic values within the targets can reduce the diabetes related complications and same reports suggest that those patients who are knowledgeable regarding their diabetes, had better short term and long term glycaemic control.[2] Hence, it becomes very important to impart correct information and knowledge to the diabetic patients about the disease.

The present study was done to evaluate disease knowledge, attitude and practices (KAP) of diabetic patients.

MATERIALS AND METHODS: The present study was done from Oct 2015 to Dec 2015 in Department of Medicine, Mayo Institute of Medical Sciences, Gadia, Barabanki, UP.

The study included 100 patients of Type 2 diabetes of varying duration and who were on treatment. The objective and protocol of the study was detailed to all the patients who agreed to participate in the study. The written informed consent was obtained from all the patients before starting

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the study. Also all the included patients were ensured confidentiality.

A questionnaire of 20 multiple choices or yes/no type questions on KAP was use to assess the knowledge, attitudes and practices of the patients. The designed questionnaire was first administered to 5 randomly selected patients in a pilot study to ensure the validity and suitability of content, clarity and flow of questions. Required correction and flow was changed based on pilot study. The language used for preparing the questionnaire was English but before using it, was translated from English to Hindi and was administered to each patient in face to face interviews to collect the data.

All the data were analyzed using IBM SPSS- Ver.20 software. One-way Analysis of Variance (ANOVA) was used to determine the level of significance. Pearson chi square test was done to evaluate the KAP. P values <0.05 was considered to be significant.

RESULTS: A total of 100 Type 2 DM patients were enrolled in the present study. Fifty-four (54%) were men and forty-six (46%) were women. Mean age, weight, height and BMI were 53.84±9.49 years, 69.23±12.27 kgs, 159.29±8.26 cm and 27.31±2.48 kg/m^2 respectively. Fasting blood glucose and post prandial blood glucose was done for 64 and 90 patients respectively and a mean value of 131.58±50.63 mg/dl and 199.69±82.68 mg/dl was observed respectively. Mean HbA1c and creatinine in study population was 7.85±1.8% and 1.01±0.39 unit respectively. All the patients were married (100%). Most of the patients (63%) were having age more than 50 years.

Eleven (11%) patients have received no formal education whereas 53% patients were graduates or have done post-graduation. Fourteen (14%) and 21% of the patients were having primary or secondary level education respectively.

Out of 100 patients, 73% were from the urban area and 27% belonged to rural area. Among females most of the patients were housewives followed by 17% from the government jobs, 14% had private jobs and 9% were doing business. Sixty-eight (68%) patients were earning more than 10000 per months whereas 32% of the patients were having monthly income of less than 10000 rupees.

In present study, fundus examination was done in 33% patients. Out of 27 patients whose ECG was done, 25 (92.59%) were found to have normal ECG whereas, one patients had LVH and one had CAD.

Sixty-seven (67%) patients were diagnosed with T2DM incidentally whereas 33% were diagnosed based on symptoms of T2DM.

Most of the patients (32%) were having diabetes for more than 10 years followed by 30% patients who had duration of diabetes between 1-5 years. Twenty-four (24%) were having diabetes duration between 6-10 years and only 14% patients had diabetes duration of less than one year.

Most of the patients (55%) were not having any family history whereas 37% were having first degree relative with diabetes and 8% had second degree diabetic.

Analysis of glycaemic control among diabetes patients showed that 48% had acceptable control (HbA1c 7–8%) whereas 38% of the patients had poor glycaemic control (HbA1c >8%). Only 14% patients had good control (HbA1c < 7%) of diabetes.

Knowledge Parameters	Response (%)	
	Yes	No
Cause of diabetes	46	54
Symptoms of diabetes	65	35
Normal fasting level	42	58
Symptoms of hypoglycaemia	50	50
Condition leading to hypoglycaemia	52	48
About life style modification	65	35
About Anti-hypoglycaemic agents	75	25
Insulin therapy	16	84
Fast acting insulin	10	90
The proper way of mixing	14	86
Right time to take insulin injection	15	85
Diet plan	39	61
Diet plan during infection	15	85
Evenly spaced meals	54	46
Regular exercise program	46	54
Importance of feet examination	39	61
About chronic complications	28	72
Compromised immunity in diabetes	17	83
Fear frustration anger and anxiety	74	26

Table 1: Distribution of diabetes related knowledge of patients

Data is expressed as percentage of patients.

Quality Variable	Variable Items	Response (%)
Frequency of seeing diabetes educator	None	31
	Once	62
	Twice	7
Frequency of clinical visit	≥ 3	76
	≤ 2	24
Periodic feet examination	Cannot recall	39
	No	40
	Yes	21
Periodic retina examination	Cannot recall	24
	No	20
	Yes	56
Last retinal examination	≤ a year	56
	> 1 – 2 years	4
	> 2 years	4
	Cannot recall	36
Periodic heart examination	Cannot recall	23
	No	17
	Yes	60
Last heart examination	≤ a year	53
	> 1 – 2 years	5
	> 2 years	2
	Cannot recall	40

Periodic kidney examination	Cannot recall	14
	No	12
	Yes	74
Last kidney examination	≤ a year	65
	> 1 – 2 years	5
	> 2 years	2
	Cannot recall	28
Effect of diabetes on work	No effect at all	44
	Absenteeism or decreased ability	51
	Total inability to work	5
Attitude towards DM and DM care	Negative	25
	Positive	75
Self-Monitoring of Blood Glucose	Always test for blood sugar	13
	Often check for blood sugar	9
	Sometimes take blood sugar test	40
	Never took blood sugar test	38
Barrier of self-testing among DM patients	Too expensive	17
	Too painful	12
	Not really needed	66
	Don't know how to read results	11

Table 2: Distribution of responses of the patients to the practice questions

Data is expressed in percentage of patients, DM; diabetes mellitus.

DISCUSSION: It is well documented that patient's knowledge and patient's engagement can lead to better control of hyperglycaemia.[3] American Diabetes Association (ADA) has also emphasized the importance patient's self-care practices and education of patients for managing and preventing diabetes complications.[4]

Knowledge of diabetes and its associated complications, awareness and good practices can be helpful for both physician and the patients to achieve the target goals.

Patients with diabetes must have basic knowledge of the disease like its signs and symptoms, diabetic care and its management etc. which can help in reducing the hospitalization risk due to diabetes complication and also it may provide better compliance to the patients.[1,5] Satyanarayana TB et al had also reported that only 39% patients were aware about the symptoms of diabetes and less than 20% of patients knew about the diabetes complications.[6]

With regard to knowledge about the cause of diabetes, only 46% answered correctly that in diabetes there is a high blood glucose level than normal. Knowledge about normal level of glucose is very important and worthy as it may improve self-care and patient's involvement in the management of diabetes.

Most of the patients in present study showed a significant knowledge related to symptoms of diabetes, symptoms of hypoglycaemia, condition leading to hypoglycaemia, life style modification, oral hypoglycaemic pills, evenly spaced meals. Similar findings were reported by Al Bimani ZS et al.[1]

The comparatively high rate of knowledgeable patients in present study might be due to more percentage of educated patients and most of them were having family history of diabetes.

Whereas study population was having poor knowledge regarding normal fasting level, insulin therapy, the proper way of mixing of two insulins, right time to take insulin injection, diet plan, diet plan during infection, compromised immunity in diabetes and regular exercise program. El-Khawaga et al in their study also reported that most of the patients were not aware about normal fasting blood glucose level, symptoms of hypoglycaemia (48%) and were having less knowledge of cause hypoglycaemia.[7]

Different studies conducted in the past to assess the KAP of diabetic patients in Egypt, Oman, United Arab Emirates and India concluded that knowledge insufficiency was the result of low education level, low monthly income and low self-care.[1,2,7,8] The present study also found that educational status of patients has a significant effect on the knowledge parameters ($p<0.05$). Present study could not found any significant difference in the knowledge of both the genders ($p>0.05$).

Norris SL et al also highlighted the importance of disease knowledge that may improve the self-care practice and may lead to desirable change in controlling the disease.[9]

Self-care for a patients and good health practices can enhance both duration and quality of life of patients with diabetes. Required modifications in patients' life style like smoking, physical activity and nutrition etc. can help the patients to live a normal life like a non-diabetic patient. Regarding self-care practices in present study; most of the patients were following good practices like frequency of clinical visit was ≥3 for most of the patients (76%), regular cardiac check up in 60% and periodic renal function tests were done in 74% patients and in most (65%) of them they were done within last one year. Almost similar findings were reported by El-Khawaga G et al.[7]

However, many patients were following poor practices like 31% patients had not seen diabetes educator even once, 79% patients were not able to either recall or were not performing feet examination and 44% patients had not gone retinal examination. Al-Maskari F et al also reported 15.30% patients who were following poor practices.[2]

In present study, most of the patients (51%) had responded that diabetes had resulted in to absenteeism from work or decreased work efficiency. Most of them (75%) had positive attitude towards their disease. In present study many patients (38%) were not performing self monitoring of blood glucose (SMBG) and 40% patients responded that they do home monitoring occasionally. Similar results were

reported by Lopez et al, and they reported that this low frequency of SMBG may be due to psychological factors. [10] In present study significant no of patients had good glycaemic control (HbA1c < 7 %), similar findings were reported by Padma et al who reported 64% of their patients who were following good practices have achieved their glycaemic goals. [11]

Present study had few limitations like there was a small sample size and it was not randomized trial; a large randomized trial is required to correlate the present study data.

CONCLUSION: The present study shows that in spite of suffering from diabetes for years, patients were not following the recommended practices of diabetes management. Diabetes education programs are required to increase patients' awareness about the disease for improving their understanding regarding disease, compliance and management which can make the patients to cope with the disease.

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