Knowledge and Attitude towards Insulin Therapy among Type 2 Diabetics

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Abstract:

Background: Many patients with diabetes mellitus are reported to be reluctant to insulin therapy for reasons ranging from perception of pain and inconvenience to the social embarrassment of using syringes in public. Patients' fear of the side effects of insulin therapy and its perceived intrusiveness into their lifestyle may contribute to such reluctance, resulting in both physiological and psychological stress.

Objective: To uncover the knowledge and attitude (about insulin therapy) of type 2 diabetics' patients whose treatment has recently been shifted to insulin.

Patient and method: A cross sectional study was conducted on a sample of type 2 diabetes patients attending the Iraqi National Diabetics' Center in Baghdad. The sample was pooled from all patients who fulfilled the inclusion criteria consented to the study.

Results: The study involved 133 patients with type 2 diabetes mellitus; out of these, 58 (43.6%) were males. more than 78% were between 41-60 years. The patient's knowledge about insulin, it was found that 2 patients only (1.5%) have poor knowledge, 57 patients (42.8%) have medium knowledge, while 74 patients (55.6%) have good knowledge.

Conclusion: The knowledge of the diabetics in our sample is relatively good Holding continuing education programs about diabetes mellitus is essential to upgrade their knowledge.

Key words: diabetes mellitus, type 2, insulin, attitude, knowledge.

Introduction

Diabetes is a metabolic disease; the main manifestation of which is chronic hyperglycemia which leads to further complications and damage to various organs of human body. The primary goal of diabetes treatment is to maintain blood glucose levels close to normal range [1]. The incidence of type 2 diabetes has increased dramatically in the recent years [2–4], and evidence-based treatment algorithms have encouraged the utilization of insulin therapy earlier in the course of the disease when glycemic control is inadequate. Different reasons are proposed in failure to achieve therapeutic goals such as poor adherence to treatment regimens by patients or malpractice by physicians [5]. Despite the therapeutic effects and benefits of insulin; many patients are reported to be reluctant to initiate such therapy for reasons ranging from perception of pain and inconvenience to the social embarrassment of using syringes in public [6]. Patients' fear of the side effects of insulin therapy and its perceived intrusiveness into their lifestyle may contribute to such reluctance resulting in both physiological and psychological stress. Several studies did explore patients' attitudes toward insulin while they are on insulin therapy, but only a few have examined patients' attitudes prior to treatment [7,8]. Well-known benefits of achieving glycemic targets that prevent long-term complications associated with diabetes, the transition to insulin therapy remains a difficult threshold for many patients to cross in addition to provider obstacles such as lack of staff time, lack of resources, and clinical inertia[9].

The objective of this study is to uncover the knowledge and attitude (about insulin therapy) of type 2 diabetics' patients whose treatment has recently been shifted from oral hypoglycemic agents to insulin.

Patients & method

This cross sectional study has been conducted on a sample of patients who have type 2 diabetes mellitus. The study was conducted during the periods from January through June 2010 at the Iraqi National Diabetics' center in Baghdad. The sample was a consecutive one in which we pooled all the patients that are attending the center as type 2 diabetics (during the study period) with an inclusion criteria that the patients should be shifted from oral hypoglycemic agents to insulin therapy at least within one year before the study to figure out their knowledge about insulin, the method by which they use it and their feeling and attitude about this new maneuver in their therapy. Data collection was performed by the researchers themselves through an already prepared questionnaire that was filled through a direct interview.

A score was constructed to assess the knowledge of the respondents by giving score zero to the wrong answer, one to the incomplete answer and two to the correct answer. The total score was assessed in the following way: if the respondent collected more than 16 marks then he (she) is labeled as having a good knowledge, if between 9-16 then this means moderate knowledge, and the one who collects 8 and less was referred to as having a poor knowledge.

Results:

The study involves 133 patients with type 2 diabetes. Out of those 58 (43.6%) were males. Demographic information is summarized in Table 1.

More than 78% were between 41-60 years .The duration of diabetes among patients was more than 10 years in 45.8%, around 73% of patients had a level of

education that did not exceed the primary school. The results did also reveal that 74.4% of the patients were visiting their physician once (or less) per month.

Regarding the knowledge of the patients about insulin we found that 2 patients only (1.5%) have poor knowledge, 57 patients (42.8%) have medium knowledge, while 74 patients (55.6%) have good knowledge as shown in table 2. Other results of patient knowledge showed that 91.7% know where to keep insulin,65.4% know the types of insulin, 85% know that insulin cannot cause addiction ,81.2% know that wrong dose insulin cause side effect, 66.9% know that insulin more effective than oral hypoglycemic ,while 80.4% do not know the units of insulin (table 3).

Regarding the attitude of patients towards insulin the results showed that 69% think that insulin injection is embarresing,57% think that insulin injection is painful, only 33% think that insulin injection is costly, 30% own glucometer, 38% decide their insulin dose without asking the doctor, 87% prefer other treatment rather than insulin,82% rotate insulin injection, only 25% forget insulin injection,84% prefer to return to their old treatment, while all of the patient prefer single injection rather than multiple (table 4).

Table (1): Demographic and other characteristics

Demographic and other characteristics		No. (133)	%
Age (years)	51-60	28	21
	30-40	49	36.8
	41-50	56	42.1
Sex	Male	58	43.6
	female	75	56.4
Education	None	30	22.5
	Primary	68	51.1
	Secondary	12	9
	College	23	17.2
Marital status	Single	18	3.5
	Married	107	80.4
	Widow	8	6
Duration of Diabetes	<5yr	17	12.7
	5-10yr	55	41.3
	>10yr	61	45.8
Sugar check/week	Once or less	44	66.3
	Twice	53	21.2
	More	35	12.5
doctor visit/month	Once or less	99	74.4
	Twice	27	20.3
	More	7	5.2

Table (2): The scores of patient's knowledge

Knowledge	POOR	MEDIUM	GOOD	TOTAL
NO.	2	57	74	133
SCORE	<8	9-16	16-24	24
%	1.5	42.8	55.6	100

Table (3): knowledge of patients to insulin therapy

knowledge	Scores		
	% of 0	% of 1	% of 2
What to do for hyperglycemia?	24.8	18	57.1
Where to keep insulin?	00	9.7	91.7
Do you know dose of insulin (in units)?	80.4	16.5	3
What large dose can cause?	2.2	12	85.7
Do you know types of insulin?	3	31.5	65.4
How to use glucometer?	54.8	1.5	43.6
Does insulin increase complication?	18.7	3	76.7
Does injection means advanced disease?	20.3	7.5	73.6
Does insulin causes addiction?	15.7	6.7	85
Is insulin more effective than oral hypoglycemic agent?	12.7	27.8	66.9
Does wrong dose cause S.E.?	15.7	3	81.2
Does wrong technique cause problems.	35.3	10.5	54.1

Table (4): Attitude of patients to Insulin therapy

Attitude	*Yes*		*No*	
	No.	%	No.	%
Injection cause embarrassment	92	69	41	30
Injection is painful	77	57	56	42
Insulin is costly	45	33	88	66
Prefer to use glucometer	41	30	92	69
Decide your insulin dose	51	38	82	61
Prefer other treatment	117	87	16	12
Rotate injection	82	62	51	38
Forget injection	34	25	99	74
Return to OHA	113	84	20	15
Prefer single injection	133	100	0	0

Discussion

The results showed that patient's knowledge about insulin therapy use and its complications was satisfactory (55.6% scored good &42.8% scored medium), this may be explained by 86.9% were of diabetic duration more than five years. So their knowledge may be acquired from their own experience and from discussion with other patients as they meet in the clinic[10]. The results also revealed that 66% were checking their blood sugar once or less per week although 30% of the patients own personal glucometer (accu-check). This may be explained by the fact that most of the patients prefer(or trust) laboratory blood sugar checking more than checking it by themselves or mar be due to that readings are usually less than that measured by glucometer (venous blood versus capillary)[11].

In this study ;four major barrier to usage of insulin emerged: 76.7% of the respondents think that the use of insulin increases complication as some patients noticed or heard that a patient or their relatives whose treatment was shifted to insulin (late in his disease) has developed some complications. Some of the patients (73.6%) cited that Insulin therapy indicate advance disease and bad prognosis of diabetes mellitus. While (85%) think that insulin can cause addiction and that they cannot switch again to oral hypoglycemic agents (as three quarters of the sample were of none or primary educational) .two third of the patients confirm that insulin injections causes embarrassment. The economic cost of maintaining insulin therapy was not a major issue for those patients as only 33% of patients consider insulin as a costly therapy probably because the majority of the patients take their insulin from primary health care center for free. The most interesting defect in knowledge was related to the unit of insulin as 80.4% do not know that insulin measured in units (1ml =100 unit) while they use to measure it by milliliter (cc)[12].

Forgetting the dose was not a major problem among the sample individual as only 25% used to forget their doses ,this results was consistent with Trisha D. et al[13] as 20% forget their daily doses while Gilbert et al[14] reported more than 80% of the patients missed

the dose and more than half of insulin users report intentionally skipping shots every now and then, in fact, 1 in 5 patients makes a habit of missing injections, according to a survey of 502 people with type 2diabetes. Those most prone to skipping a dose are people with type 2 who are on unhealthy diets, or low incomes, as well as those for whom insulin injections cause embarrassment, inconvenience, or pain [15].

The main limitations of this study were the small number of patients and the possibility of selection bias [16].

We can conclude from this study that the knowledge of the diabetics in our sample is relatively good Holding continuing education programs about diabetes mellitus is essential to upgrade their knowledge.

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