Perception and attitude of insulin usage in Diabetes mellitus type 2 patients in Pakistan: A questionnaire based study

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ABSTRACT

The prime concern of this study is to analyze the perception and attitude of diabetes patients about usage of insulin. The study was conducted in Karachi Pakistan; the patients were taken from all socio-economic groups. A pre-tested and validated questionnaire was used to collect the data directly from patients and in some locations conducted interviews. The 885 diabetes patients were selected with convenient random sampling. The statistical analysis was performed on Statistical Package for Social Sciences. The results of study showed that 61.8% patients did not used insulin for diabetes management, and 43.6% patients did not consider insulin as a good choice for diabetes management. The major identified reasons to avoid insulin are high cost of insulin treatment, fear of injection pain, poor quality of life associated with insulin use, insulin addiction, and lack of insulin injection dispensing facility.

Keywords: Diabetes, insulin, refusal, attitude, questionnaire,

INTRODUCTION

Diabetes is one of the fundamental open wellbeing issues in developing and developed countries. In Pakistan the diabetes patients from age 20 to 79 is 6.6 million. The degree to which this danger is enunciated is influentially joined to the level of westernization sort of lifestyle [1]. Diabetes is one of metabolic disease; the main manifestation of disease 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. The incidence of type 2 diabetes has increased dramatically in the recent years, and evidence-based treatment algorithms have encouraged the utilization of insulin therapy earlier in the course of the disease when glycemic control is inadequate [2-5]. In most of patients, the oral hypoglycemic agents alone are insufficient for maintaining glycemic control and need insulin therapy. This was shown in the UK Prospective Diabetes Study, where more than half of newly diagnosed diabetic patients required insulin therapy during initial five to six years of disease diagnosis [6].

Although most of healthcare providers agree that use of insulin is an effective approach for the management of diabetes type 2, many clinicians still considered insulin therapy as the last resort and believes that their patients are hesitant to take insulin [7]. A study conducted in Singapore reported that about 70.6% of diabetes type 2 patients were expressed unwillingness to use insulin for management of diabetes. The important reasons which contribute to avoid insulin usage in this study mentioned that inappropriate expertise of dispensing insulin injection, fear of pain and poor quality of life which will create problem at work station [8]. While another study conducted in Bangladeshi patients in UK showed that 42.4% patients refused to use insulin immediately, while 20.3% patients refused to initiate insulin therapy after several counseling sitting with their healthcare providers [9]. In another study conducted in Iranian patients showed that about 77% of diabetic type 2 patients refused to use insulin for management of their diabetes. This study showed the fear of injection was major reason to avoid insulin use [10].

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The aim of this study is to analyze the patients' perception about usage of insulin and to identify the major reasons of refusal to use insulin among diabetes patients in Pakistan. Although insulin treatment is well-accepted by symptomatic diabetic patients, it is still often delayed in less severe patients, the injectable insulin mostly prescribed in diabetes patients. The understanding of patient's perception about insulin usage would ultimately help doctors to take the most appropriate counseling when having to motivate patients to initiate or to intensify insulin injection in their diabetic patients.

MATERIALS AND METHODS

Karachi consists of more than 15 million residents and considered as superior economic zone of Pakistan. The study was conducted in 5 districts of Karachi. The patients were selected from all socio-economic groups of society to avoid any biasness in selection. In this study patients were selected from both groups who were managed their diabetes with only oral hypoglycemic drugs and those who are already used insulin for their diabetes treatment. The diabetic patients were selected only who were

fulfilling the eligibility criteria. The samples were choosing by random sampling technique. Inclusion criteria includes diabetes mellitus type 2 patients, age more than 18 years, Karachi resident, ambulatory patients, Insulin user, only oral anti diabetic drugs users. Whereas exclusive criteria exclude the pregnant women, people have age of less than 20 years and the age of more than 60 years.

A format of precise pre test questionnaire was set to gain the information on socio-demographic and clinical individuality and in some locations conducted interviews with patients due to lack of understanding among un-educated patients. The totals of 900 diabetes patients were approached based on proportionate attendance of patient, with convenient random sampling. From all randomly selected individuals 885 were found willing to participate in the study. The relevant data regarding usage of insulin and find out how much patients used insulin in sample size. Then further evaluated the perspective of patients about insulin is good choice for diabetes treatment and in last segment identified the major reasons to avoid insulin usage among diabetes patients in Pakistan.

Table 1: Reasons / Variables of Refusal of Insulin Usage.

Variable	5 (Maximum)	4	3	2	1 (Minimum)
Cost					
Fear of Injection					
Quality of Life (Obesity, Socioeconomic problem)					
Fear of addiction (Life time use)					
Lack of dispensing facility					

Ethical approval: Ethical approval permission was ensured from the Board of Advance study and Research (BASR) of the University of Karachi. Prior consent was taken from patients for this study. All educated patients read the permission paper. For the uneducated patients, the interviewer explain and teach the consent paper to them and if they show commitment and agreement, then taken the interview with the help of questionnaire.

Data Analysis: Data were authorized following double entry as given the code number of all filled questionnaire and then data was first input in the excel sheet and then analyzed further on Statistical Package for Social Sciences (SPSS), mean, variance, valid frequency of answer, percentage and cumulative percentage was taken. The histogram of data was taken for further understanding. The significance level is of 5%.

RESULTS
Demographic and clinical properties: Totally 885 individuals with diabetes were asked with a

highest percentage of age group with more than 51 years of age is (51.5%). A Majority (53.7%) of study subjects was female and male was 46.2% and of the total 33.1% individuals had graduation qualifications or having superior qualification. Family histories of diabetes patients were recorded. The percentage of family history with diabetes was 58% and without family history was 41.5%. The results of study showed that 61.8% patients did not used insulin for diabetes management. Patient's perception either the insulin is good choice for management of diabetes disease; the 43.6% patients did not consider insulin as good choice for diabetes management. Moreover the reasons of refusal of insulin usage analyze separately. In this segment further asked what are the major reasons for avoiding the insulin usage. These questions give preference range from maximum (5) to minimum (1). The first identified reason to avoid insulin usage was high cost of insulin; the outcome of this question showed that 40.6% patient give maximum marking of 5 for this factor, while 15.6% marking the 1 means it is least important reason to

avoid insulin usage. The other reason to avoid insulin usage is fear of injection or pain of injection in this question the results showed that 40.6% respondent gives this reason is contribute to maximum cause of avoiding the insulin use while 25% respondent rate this factor at its least, as this is not most important reason to avoid the insulin use. The next reason to avoid insulin is perception about the fear of quality of life become poor due to insulin use. The outcome of this question showed that 12.5% give least importance to this factor, while 43.8% give maximum score to this issue that is why the patient avoids using insulin in most of cases. The next reason that some people considered that insulin addiction or life time use of insulin if once used, otherwise diabetes will not control with oral medicine or life style modification. The outcome of this question showed that 25.8% give least importance to this factor while 41.9% give maximum importance to this factor while other patients give mediocre response of this question. The other important factor to avoid insulin in Pakistan is lack of dispensing facility (patient not able to use injection) and must go to dispenser for insulin use, so most of time patient avoid insulin use due to this reason. The outcome of this question showed that 19.4% give least importance to this factor while 22.6% give maximum importance to this factor. While majority showed that this will overcome after some time and most of patients start to use injection by self or with the help of any other family member.

DISCUSSION

This study showed that majority of selected patients did not using insulin for management of Diabetes mellitus, and a major pool of diabetes patients did not consider that insulin is good choice to manage their diabetes. The perception of patients regarding insulin usage is not much satisfactory and negative attitude regarding insulin use will ultimately results in patients poor adherence with treatment and not able to achieved treatment goals. The inappropriate management results in hyperglycemia and hypoglycemia which leads to microvascular and macrovascular complications in future. The diabetes complications insert heavy economic burden on country and alarming for decision makers to increase the knowledge of patients to control these complications, the adequate patient's education regarding insulin usage will help to change the patents perception and increase patient's adherence with diabetes treatment.

The reasons of refusal to use insulin were analyzed in this study. The cost of insulin includes cost of dispenser, cost of syringe, cost of alcohol swab and cost of insulin. This factor was also reported in other studies [10].The outcome of this question showed that about 40.6% patients avoid insulin use due to its high cost, they love to use oral anti diabetic drug which was considered to be cost effective choice as compared to insulin. The most of patients considered that with insulin usage hypoglycemic events will further augment in cost of treatment.

The fear of injection pain is another major factor to avoid insulin usage, which was reported in other studies as well [8-10]. The doctors should give proper counseling to patients and informed about benefits of insulin and try to use pen device in these patients, it will help to overcome this barrier in more appropriate way.

The perception of patients about poor quality of life is associated with insulin usage is noticeable during this study. The patient believes that after certain years of insulin use the obesity is major issue, which leads to several other complications. The lifestyle issues related to timing of insulin usage during traveling, the use of injection in public and during meetings give negative impact on their quality of life. The clinicians focus to educate people about new insulin analogue which give flexibility in dosage interval and pen device which will help to use insulin during traveling will help patients to use insulin with convenience.

The attitude and perception of diabetes patients regarding use of insulin is very strong and believes that the addiction of insulin, and once insulin use than the oral anti-diabetic drugs will not more effective and insulin usage is to be considering last resort for the treatment of diabetes. Clinicians should educate peoples that insulin is not used as last resort, and there is no relation between insulin use and addiction for life time.

In developing countries lack of dispensing facility is another barrier to use insulin; most of patients not able to use injection itself, so they need to go near by its home available clinic or call dispenser.

CONCLUSION

The findings from this study showed that the major reason of poor adherence to diabetes treatment is refusal of insulin usage among diabetes patients. The reasons of avoidance should be properly addressed at different levels and create awareness and change negative attitude towards insulin use. In developing countries, the disease based survey studies are very rare and in Pakistan very few studies has previously been published. The approximate calculation of these studies provides

very helpful information related to the disease management and impact that a society faces from such illness[11]. The officials need to design patient's education program and conduct patients counseling about use of insulin at the time of diagnosis, in this way the patient accept the importance of insulin use beside oral anti-diabetic drugs and during course of treatment when clinicians need to start insulin it may not face resistance from patients.

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