

Insulin Therapy- Common Misconceptions among Diabetics

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Abstract

Background: To find out misconceptions about insulin among diabetics presenting in outpatient department of a tertiary care hospital.

Methods: in this cross-sectional observational study, diabetic patients either male or female, more than 15 year of age, irrespective of their diabetes typing were included. Patient less than 15 year of age, having dementia, having other mental or psychiatric illness were not included. The sampling technique was non probability random sampling. The study tool was a predesigned questionnaire, containing close-ended questions.

Results: Out of 250 respondents, 50% were male. About 69% responded that insulin commencement means serious stage of diabetes and 68% considered as an expensive modality. According to 32% insulin usage restricts daily life activities.

Conclusion: Diabetic patients of this area had many misconceptions about the insulin therapy.

Key words: Diabetes, Insulin, Misconceptions

Introduction

Incidence of diabetes mellitus (DM) is increasing globally. Cases of diabetes have risen from 108 million in 1980 to 422 million in 2014.¹ It is estimated that 30.3 million persons of all ages are living with diabetes in USA.² WHO projects that diabetes mellitus will be the 7th leading cause of death in 2030.³ The economic impact of DM is high and it is a major contributor to the increasing healthcare cost worldwide.⁴ Data from Pakistan showed that prevalence of type 2 DM among the population aged >25 years was 13.9% in Sindh and 8.6% in Baluchistan with a further 11.1% males and 13.4% females with impaired glucose tolerance in the two provinces respectively.^{5,6} Diabetes is among top five non-communicable diseases in Pakistan.⁷

Early diagnosis and treatment of diabetes is necessary to avoid complication. Along with non pharmacological measures like healthy life style, dietary modifications and weight controlling strategies a variety of oral hypoglycemic agents are available for the treatment of diabetes mellitus type 2 (DM type 2).⁸ Insulin is the mainstay of the treatment for type 1 diabetes mellitus (DM Type 1).⁹ Diabetes is a progressive disease, many patients with DM type 2 also require insulin in the later stages of the disease.¹⁰ Cultural beliefs and misconceptions about treatment, does affect the treatment of diabetes, education level was found more significant than ethnicity in diabetes related beliefs that influence the treatment.^{11,12} Some people use bitter things to treat the DM, other use herbs and other dietary supplements as alternatives to mainstream western medical treatment.¹³⁻¹⁵ A study has estimated that up to 30% of diabetic patients use complementary and alternative medicine options.¹⁶ Early initiation of insulin benefits the patients in DM Type 2, but it is usually delayed and one major factor in delaying is the refusal for insulin therapy from patients.^{17,18} Most of the patients refuse insulin due to fear of pain, poor quality of life, dependence issues, storage issues and dispensing facilities.¹⁹ Majority of the doctors are of view that that patients did not like to use insulin, so they prefer to prescribe oral anti diabetic drug instead of insulin.¹⁹

Patients and Methods

This cross-sectional observational study was conducted at the Diabetic Clinic of general outpatient department, Benazir Bhutto Hospital Rawalpindi from 1st August to 30th September 2017. Diabetic patients either male or female, more than 15 year of age, irrespective of their diabetes typing were included in the study. Patient less than 15 year of age, having dementia, and mental or psychiatric illness were not included in the study. The sampling technique was

non probability random sampling . The study tool was a predesigned questionnaire, containing close-ended questions. The study technique was an interview. Age, gender, level of education and response to asked questions were recorded. Frequencies, percentages and relation between different variables were calculated.

Results

Total 250 respondents were included in the study, response rate was 100%. The major bulk of our study population fell between ages of 36-55 years 48.8% (n=122) followed by 56-75 years 42.4% (n=106), 15-35 years 8.4% (n=21) and > 75 years 0.4% (n=01).

Table 1: Concepts about insulin therapy among insulin users (n=250)

Variable	Agree	Disagree	Neutral
Insulin is the last treatment	183(73.2%)	47 (18.8%)	20 (8.0%)
Insulin commencement indicates serious stage of diabetes	171 (68.4%)	50 (20.0%)	29(11.6%)
Insulin injection is costly	170 (68.0%)	49 (19.6%)	31(12.4%)
Insulin injection cause pain	123 (49.2%)	87 (34.8%)	40(16.0%)
Insulin lowers blood sugar to more dangerous levels	121 (48.4%)	87 (34.8%)	42(16.8%)
Insulin therapy leads to renal failure in diabetics	94 (37.6%)	128(51.2%)	28(11.2%)
Fear of scaring at site of insulin injection	90 (36.0%)	131(52.4%)	29(11.6%)
Insulin therapy leads to blindness in diabetics	81 (32.4%)	125(54.0%)	34(13.6%)
Insulin usage restrict daily life activities	80 (32.0%)	159(63.6%)	11 (4.4%)
Lack of confidence in insulin injection	60 (24.0%)	145(58.0%)	45(18.0%)
Insulin fails to control blood sugars	57 (22.8%)	163(65.2%)	30(12.0%)
Insulin therapy is a source of social embarrassment	51 (20.4%)	156(62.4%)	43(17.3%)
Insulin is a fake treatment actually	39 (15.6%)	160(64.0%)	51(20.4%)

Gender distribution was equal among sample studied 50.0% (n=125) each. 44% (n=110) had diabetes from last 1-5 years followed by 25.2% (n=63) >10 years, 24.0% (n=60) 6-10 years and 6.8% (n=17) had less than 1 year since diagnosis. Regarding education status, 77.6% (n=194) were under matriculation and 22.4% (n=56) educated up to matriculation or above. Majority (73.2%) takes insulin as last resort (Table 1). There was

significant association between level of education and misconceptions about insulin (Table 2).

Table 2: Level of awareness about insulin and its usage according to educational status

	Under Matric n=194		Matric and above n=56		P value
	Yes	No	Yes	NO	
Insulin commencement indicates serious stage of diabetes	136(70.1%)	58(29.1)	35(62.5%)	30(37.5)	0.065
Insulin is the last treatment	150(77.3%)	44(22.7)	47(58.9%)	09 (41.1)	0.067
Insulin therapy leads to renal failure in diabetics	82 (42.2%)	112 (57.8)	12(21.4%)	44(65.4)	0.016
Insulin therapy leads to blindness in diabetics	70 (36.1%)	124(63.9)	11(19.6%)	45(80.4)	0.012
Lack of confidence in insulin injection	53 (27.3%)	141(72.7)	7 (12.5%)	49(87.5)	0.005
Insulin injection causes pain	110(56.7%)	84(43.3)	30(53.6%)	26(46.4)	0.022
Insulin injection is costly	126(64.9%)	68(35.1)	30(53.5%)	26(46.5)	0.054
Insulin usage restrict daily life activities	70 (36.1%)	124(63.9)	10(17.9%)	46(82.1)	0.028
Insulin fails to control blood sugars	49 (25.3%)	145(74.7)	8 (14.3%)	48 (85.7)	0.058
Insulin lowers blood sugar to more dangerous levels	87 (44.8%)	107(55.2)	34(60.7%)	22(39.3)	0.004
Fear of scaring at site of insulin injection	71 (36.6%)	123(63.4)	10(33.9%)	46(66.1)	0.004
Insulin therapy is a source of social embarrassment	38 (19.6%)	156(80.4)	13(23.2%)	43(76.8)	0.536
Insulin is a fake treatment actually	32 (16.5%)	162(83.5)	7 (12.5%)	49 (87.5)	0.597

Discussion

A higher level of education is associated with the better understanding of disease and administration of the advised treatment. In addition to alteration in diet and lifestyle and administration of insulin or other oral hypoglycaemic agents, the management of this metabolic disease demands continuous educational and counselling efforts.

Most of our sample population had diabetes from last 5 years and were in age group 36-55 years. Other local studies have shown that in recent years, incidence of diabetes is increasing in younger ages probably due to some genetic predisposition, environmental, dietary factors and sedentary life styles.⁶ In present study

68.4% patients responded that commencement of insulin means disease at serious stage, another 73.2 % said it is the last treatment option; results are almost comparable with previous studies, a study from India showed same results.²⁰

Diabetes can cause chronic renal failure and blindness due to diabetic nephropathy and retinopathy; however more than 30% respondents in our study considered insulin is the cause for that. Same was observed by Polonsky WH et al.²¹ Another study from Malaysia had same results.^{21,22} We had almost matching results with past studies regarding lack of confidence in insulin.^{20,23} In response to cost of insulin, pain on administration, restriction to daily routine and failure to control blood sugar level; present study reflect the similar results as previous paper.²³ Our study showed significant relation between education level and misconception about insulin as described in previous local studies.^{24,25}

Conclusion

1. Diabetic patients of this area had many misconceptions about the insulin therapy. A major part of the study population is unaware of the proper use of insulin and its various effects. Many of them do not know about relation of insulin and disease severity.

2. Affordability of insulin, due to financial constraints, is a hurdle in its usage

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