

# Awareness of insulin and factors contributing to its avoidance in patients with type 2 diabetes mellitus

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## Abstract

**Introduction:** The incidence of Diabetes Mellitus is increasing rapidly. Patients of Type 2 Diabetes Mellitus can be managed with oral hypoglycaemic agents initially, however many require insulin therapy later in the course of the treatment due to secondary resistance to oral hypoglycaemic agents. Indian Diabetic patients tend to be wary about the use of insulin. This refusal to use insulin militates against achievement of ideal glycaemic control in conditions mandating insulin therapy. This study was aimed at determining the logistic and psychological factors contributing to the refusal or avoidance of insulin therapy and the initial barriers to the use of insulin as a treatment option for Diabetes management. **Materials and Methods:** This study was a Cross-Sectional Observational study involving 50 patients with Type 2 Diabetes Mellitus attending OPD and inpatients admitted to FMMCH. A Questionnaire was framed, prevalidated, piloted and the questionnaire was administered in the local language and the data collected was analysed. **Results:** From this study it was inferred that 88% diabetic patients were aware of insulin as a treatment modality for diabetes. It was found that 80% cases avoided insulin due to difficulty in administration and remembering dosage of insulin. It was found that 76% cases had inhibitions to initiate insulin injections in view of fear of pain and 60 % diabetic subjects were wary of insulin therapy fearing that once started, it would need to be continued lifelong. **Conclusion:** Exploring patient concerns and beliefs about insulin is crucial to assist physicians in counselling and motivating patients to take insulin. **Key Word:** diabetes mellitus, FMMCH.

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## INTRODUCTION

Diabetes mellitus is a common chronic disease in all countries. The prevalence of Type 2 diabetes mellitus continues to increase, as changing lifestyles lead to reduced physical activity and increased obesity. Diabetes mellitus is one of the most common endocrine disorders affecting almost 6% of the world's population.<sup>1</sup> The

countries with the largest number of diabetes patients are India, China and United states. India and China are anticipated to be the diabetic capitals by the year 2025, as projected.<sup>2</sup> The number of diabetes patients in India currently is around 64 million and is expected to rise to 80 million by 2030.<sup>3</sup> Patients with type 2 diabetes mellitus require treatment in the form of dietary control, exercise and life style modification and oral hypoglycaemic agents. As the disease progresses, oral medications often become ineffective due to progressive deterioration in beta cell function and development of insulin resistance. In clinical practice, initiation of insulin therapy is often delayed mainly due to patients reluctance to accept insulin therapy due to psychological and behavioural factors which is referred to as "psychological insulin resistance".<sup>4</sup> This reluctance to initiate insulin therapy in a timely manner contributes to prolonged periods of poor glycaemic control among individuals with Type 2 diabetes and ultimately increases the risk for

microvascular and macrovascular complications. Patients with type 2 diabetes are often not keen for transition from oral hypoglycaemic agents to insulin therapy. The various factors contributing to this reluctance for initiation of insulin therapy are often not dealt with. This study is an attempt to shed light on the factors which are often overlooked and are contributory to failure of glycaemic control in type 2 diabetes patients due to lack of insulin therapy.

### AIMS AND OBJECTIVE

1. To determine the awareness of insulin therapy as a treatment option for management of type 2 diabetes.
2. To determine the various psychological and logistic factors contributing to the refusal of insulin therapy and their initial barriers to the use of insulin as a treatment option for diabetes management.

### METHODOLOGY

#### SOURCE OF DATA

The data was collected from 50 patients with type 2 diabetes mellitus availing the inpatient and outpatient services of Father Muller Medical College Hospital.

#### INCLUSION CRITERIA

Type 2 diabetes mellitus patients on therapy.

#### EXCLUSION CRITERIA

Patients unable to give history.

### METHODS

This study was a Cross-Sectional Observational study. A Questionnaire was framed, prevalidated and piloted. An interviewer administers the questionnaire in a local language to the patient. The data collected was analysed and tabulated.

The data obtained was analyzed by frequency, ratios and percentages.

### RESULTS

In this study it was observed that 88% cases of type 2 diabetes mellitus were aware of insulin as a treatment option for diabetes. Among 22 patients in the study group who required insulin therapy as advised by their physicians only 12 patients had successfully initiated insulin use. Out of these 12 patients it was found that 4 patients did not start treatment immediately at time of advice but agreed for insulin use after a time lag. Factors which discouraged insulin use were, patients perception of complexity of insulin injection and worry about administering the correct dose. Patients also felt that the insulin injection would be painful and they would fail to administer insulin at correct time. Around 60 % diabetics did not wish to initiate insulin therapy as they felt once initiated, they would have to continue for lifetime and 36% cases felt the cost of insulin use would be unaffordable. It was also noticed that around 6% diabetics agreed upon inhibition to start insulin, to avoid feeling of guilt for mismanaging diabetes over time.

**Table 2:** Response to the questionnaire by the diabetic subjects in the study

Sr. No.	Question	Number of cases with response as yes (%)
1.	Are you aware of availability of insulin as a treatment option for diabetes?	44 (88%)
2.	Are you on insulin now or were you on insulin in recent past?	12 (24%)
3.	Have you at any point of time been advised insulin by your doctor but refused?	22(44%)
4.	Is there a time lag between insulin advice by doctor and start of insulin therapy?	4(8%)
5.	I prefer to avoid insulin due to the painful pricks	38(76%)
6.	I avoid taking insulin since i have a tendency to forget to take it regularly .	36(72%)
7.	I find it difficult to remember the dosage and administer insulin.	40(80%)
8.	I feel embarrassed to take insulin as it interferes with social activities.	32(64%)
9.	Is taking insulin a complicated procedure?	40(80%)
10.	I prefer not to take insulin due to religious reasons/ animal source	2(4%)
11.	I prefer to avoid taking insulin since it is expensive?	18 (36%)
12.	I avoid taking insulin since i have to plan my meals priorly due to the dosage prescribed.	16(32%)
13.	I do not want to take insulin since i feel once started will require continuos insulin therapy	30(60%)
14.	I want to avoid insulin, in order to avoid complications like sudden hypoglycaemia or weight gain	8(16%)
15.	I avoid taking insulin to prevent a feeling of guilt for failed self management of diabetes	6(12%)

## DISCUSSION

A good glycemic control in type 2 diabetes often requires insulin therapy.<sup>5</sup> Unfortunately, many patients with type 2 diabetes who could benefit from insulin therapy do not receive it or do not receive it in a timely manner.<sup>6,7,8</sup> Part of this gap appears to be attributable to resistance to taking insulin among patients and resistance to prescribing insulin among health care providers. This resistance is based on a variety of factors, primarily beliefs and perceptions regarding diabetes and its treatment, as well as the nature and consequences of insulin therapy.<sup>9</sup> In a study conducted in University of Texas it was observed that the negative attitudes included concerns about the efforts, expense, and discomfort involved in taking injections; feeling uncertain about correctly applying the medication, fear and distress of the hypoglycemic symptoms that sometimes follow taking insulin. However, many said they were able to overcome these fears and concerns with instruction and by growing accustomed to the routine of taking the medication. Nearly a third (32%, 14/44) felt that being prescribed insulin indicates that the disease has advanced into a very serious stage. Injecting insulin carries a great symbolic load signalling that the condition has become grave.<sup>10</sup> In a study done in California it was observed that most subjects reported several reasons for avoiding insulin, rather than just one. The negative attitude that most strongly distinguished willing from unwilling subjects was the belief that beginning insulin therapy would indicate they had “failed” proper diabetes self management accounting to 51% cases of diabetics in the study group.<sup>11</sup> In the current study it was noticed that the most common factor contributing to failure to initiate insulin therapy among diabetics were difficulty in administration and remembering dosage of insulin as indicated by 80% of subjects. A considerable number of patients (approximately a quarter) have a psychological problem with injecting insulin, associated with a high injection anxiety or general anxiety score. This may be clinically relevant as compliance and treatment flexibility are essential factors in achieving optimal glycaemic control.<sup>13</sup> In this study the fear of painful pricks contributing to avoidance of insulin comprised of 76% cases which is a substantial group of diabetics. Hence in the present study factors like weight gain, social embarrassment, stigma, fear of hypoglycaemia, lifestyle changes, painful injections, feelings of failure and guilt, feeling of becoming ‘more ill’ or disease progression discouraged the insulin use among the patients included in this study .

## CONCLUSION

In management of diabetes mellitus insulin replacement therapy addresses the primary defect. The majority of diabetics require insulin at some stage for satisfactory glycaemic control. The sooner insulin therapy is initiated the better off patients will be in terms of avoiding complications. Hence it is important to address patients concerns, beliefs and apprehensiveness for initiation of insulin therapy by proper counselling and guidance in understanding the need for insulin therapy, simplicity of its use and long term benefits in terms of avoidance of complications.

## REFERENCES

1. Powers A C. Diabetes Mellitus. In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J (eds.) Harrison's principles of internal medicine. 18th ed. USA: Mc Graw Hill Medical; 2012. p 2968.
2. Yadav R, Tiwari p, Dhanraj E. Risk factors and complications of type 2 diabetes in Asians. CRIPS 2008; 9(2):8-12.
3. Mohan V, Sandeep S, Deepa R. Indian scenario. Indian J Med Res 2007; 125:225-30.
4. Leslie CA, Satin-Rapaport W, Matheson D, Stone R, Enfield G: Psychological insulin resistance: a missed diagnosis? Diabetes Spectrum 1994; 7:52-57.
5. De Witt DE, Hirsch IB: Outpatient insulin therapy in type 1 and type 2 diabetes mellitus: a scientific review. JAMA 2003; 289:2254– 64.
6. Home PD, Boulton AJM, Jimenez J, Landgraf R, Osterbrink B, Christiansen JS: Issues relating to the early or earlier use of insulin in type 2 diabetes. Practical Diabetes Int 2003; 20:63-71.
7. Brown JB, Nichols GA, Perry A: The burden of treatment failure in type 2 diabetes. Diabetes Care 2004; 27:1535– 40.
8. Dailey GE: Early insulin: an important therapeutic strategy. Diabetes Care 2005; 28:220–1.
9. Peyrot M, Rubin RR, Lauritzen T, Skovlund SE, Snoek FJ, Matthews DR, Landgraf R, Kleinbreil L; International DAWN Advisory Panel. Resistance to insulin therapy among patients and providers: results of the cross-national Diabetes Attitudes, Wishes, and Needs (DAWN) study. Diabetes Care 2005 ; 28: 2673-9.
10. Hunt LM, Valenzuela MA, Pugh JA. NIDDM patients' fears and hopes about insulin therapy. The basis of patient reluctance. Diabetes Care 1997; 20:292-8.
11. Polonsky WH, Jackson RA: What's so tough about taking insulin? Addressing the problem of psychological insulin resistance in type 2 diabetes. Clinical Diabetes 2004; 22:147–50.
12. Zambanini A, Newson RB, Maisey M, Feher MD. Injection related anxiety in insulin-treated diabetes. Diabetes Res Clin Pract 1999; 46:239-46.

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