Original Research Article

# Myths and misconceptions about insulin initiation among diabetics in a rural health sector of southern India

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## Abstract

**Background:** Urbanisation and industrialisation has affected health of humans over decades around world, likewise the incidence of people living with diabetes has increased in rural India. Being a chronic lifelong illness Diabetes pose lots of economical burden, along with associated morbidity and mortality. Insulin being the drug of choice in type 1 diabetes and most of the medical situations among type 2 diabetes has created a barrier of thoughts in diabetic patients and attendants of diabetics to the extent of doubting the decision of doctor. **Objective:** To study the common myths and misconceptions about initiation of insulin among diabetics in a rural health sector. **Material and Methods:** This was a hospital based descriptive study over 36 months among diabetics attending both In and Out patient departments. **Results:** Most patients believed that insulin is addictive and its dose was directly proportional to the severity of disease. Insulin therapy leads to many of the end organ dysfunction including limb amputation and neural damage. Many Expressed concern over its storage, transportation and administration stating that it requires skilled training and would burden them economically. **Conclusion:** Reasons of reluctance to insulin initiation is common in rural India. Many of reasons are mere myths and misconceptions, due to lack of basic knowledge about the diabetes and its complications along with treatment modalities including insulin. Health education by peripheral health care workers, diabetic health educator, media and treating doctor are of prime importance to dispel the myths and allay the fear of misconception.

**Key Words:** Attendants, Barrier, Insulin imitation, Myths and Misconception, Medical Scenario.

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## INTRODUCTION

India being the world capital for diabetes mellitus[1] suffers a great economical burden along with associated morbidity mortality due to diabetes. As most population lives in rural area incidence of diabetes has surpassed the level of education, poverty and occupation. Physician practising in rural area have many challenges to face from poor infrastructure, limited resources, lack of transport facility to overcrowded patients. As culture, customs and practices influences the society and the people so are the patients affected by them, leading to lack of trust and faith in methods and advances of treatment. Insulin is a cornerstone in diabetes treatment. Unfortunately, insulin therapy is frequently delayed leading to chronically elevated blood glucose levels that increase the risk of long-term complications in patients with diabetes. This is in part due to what has been called “clinical inertia” in health care professionals. In addition, patients’ reluctance to start insulin therapy is very common and it is influenced by the presence of myths and misconception about its use, benefits and consequences. These myths frequently go unrecognized by the health care provider and can represent a barrier to implement insulin therapy.[2,3,4]

## MATERIAL AND METHODS

Here we conducted a descriptive study of 508 patients living with diabetes attending to rural health sector over 36 months who required insulin therapy or initiation as a part of different medical scenarios listed (List no-1).

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patients who doubted doctors decision to initiate insulin and who denied insulin therapy were given a set of questionnaire prepared in house along with patient, their attendants and close associates were also included. And the reasons of refusal were randomly listed. After analysing the listed data we noticed that most of reasons were myths and misbelieves, which were either processed by patient or imbibed to them by attendants or close associate. We excluded patients with both ketotic and non-ketotic hyper osmolar coma.

**List no-1**

1. Newly detected type 1 diabetic or insulin dependent diabetic.
2. Acute medical emergencies :
   - Diabetic keto-acidosis
   - Acute renal failure
   - Sepsis and shock
   - Acute and chronic pancreatitis
   - Acute myocardial infarction
   - UTI and uro-sepsis
   - acute hepatitis / acute hepatic failure
   - Recurrent vomiting due to Acid peptic disease and food poisoning etc.
   - Respiratory distress due to pneumonia or acute exacerbation of COPD.
3. Acute surgical conditions:
   - Emergency laperotomy
   - Moderate to severe degree burns
   - Suspected bowel obstruction or perforation where patient is kept NBM (Nil by mouth)
   - Acute cholecystitis, cholangities
   - Paralytic ileus
4. Switch over therapy during elective major surgeries
5. Add on therapy among type 2 uncontrolled diabetics who are on
   - Dual oral hypoglycaemic agents with one sulfanyl urea included
   - Triple oral hypoglycaemic agents with one sulfanyl urea included
6. As a Last option among uncontrolled type 2 diabetics who have high HBA1C values [in-spite of maximal titration of dual or triple combinations of oral hypoglycaemic agents with sulfonylurea used to a maximal dosage]
7. As a drug of choice among chronic liver disease, congestive cardiac failure and chronic kidney disease where most of the oral hypoglycaemic drugs are contraindicated.
8. As a drug of choice where patients are put on oral or systemic steroids as a part of other medical conditions.

## RESULTS

We have listed the main reasons with the percentage values, which were mere myths and misbelieves among Diabetics, their attendants and close associates.

**Table 1:**

| | | |
|---|---|---|
| 1 | Once on a insulin lifelong on insulin-insulin is addictive and causes dependency. [Excluding type 1 diabetes and uncontrolled type 2, as per 6th of list no 1] | 56 (11%) |
| 2 | Insulin produces other organ damage like nerves and kidneys. | 32(6.2%) |
| 3 | Insulin causes blindness. | 18(3.5%) |
| 4 | Needs to be administered by a trained personnel and difficult to administer. | 41(8.00%) |
| 5 | Needs to be stored in refrigerator. | 22 (4.33%) |
| 6 | Causes allergy. | 16 (3.4%) |
| 7 | Carrying and transporting insulin to work place, college, school is difficult (specially among type 1 diabetics). | 36(7%) |
| 8 | Not available widely in market. | 14 (2.75%) |
| 9 | Dose of insulin directly proportional to complications of disease. | 44 (8.66%) |
| 10 | 1. Injecting is very painful, scary and creates phobia | 24(4.7%) |
| 11 | Insulin is associated with negative life style. | 31(6.1%) |
| 12 | Separated from family and friends. | 25 (4.92)% |
| 13 | All insulin are very expensive. | 18 (3.54%) |
| 14 | Time consuming – not readily administered. | 26(5.11%) |
| 15 | Not beneficial over oral drugs. | 43 (8.46%) |
| 16 | Can be stopped once blood sugars are under control. | 14 (2.75%) |
| 17 | Interrupts with breast feeding (among-post partum and breast feeding mothers). | 8 (1.57%) |
| 18 | Is a curse for the sin or punishment of ill deeds of past life and insulin use would interfere with religious obligations. | 12 (2.36%) |
| 19 | Is a animal or other human origin. | 13 (2.55%) |
| 20 | Doctors inefficiency to mange by oral drugs. | 15 (2.95%) |

One study has noted that up to 45% of patients avoided injecting their prescribed insulin due to perceived fear and anxiety related to pain associated with insulin administration.[12] In another study 72.9%felt insulin was a measure of last resort and 45.2% thought that tolerance developed to insulin, while 24% thought that insulin use would interfere with religious obligations. Thirty-four percent thought that it was difficult or very difficult to learn insulin administration,41%felt that they could not self inject even if absolutely necessary and 25%stated they would not use insulin in any circumstances. There

was an association of lack of education with negative image of insulin usage[13.]

## DISCUSSION

Insulin is the most potent anti-diabetic medication to reduce glucose levels and it has proven to lower micro-vascular and long-term macro-vascular events in both type 1 and type 2 diabetes. However, it remains usually a difficult threshold for many patients to cross.[2,5-9.] In addition to provider obstacles such as lack of time, lack of resources, and clinical inertia, cultural misconceptions or myths among patients with diabetes are common barriers to insulin therapy initiation[5-11.] Among the myths and misconception listed

- Most of the type 1 diabetics had doubt about doctors decision of insulin being the only choice of drug.
- Many (both type 1 and type2) diabetics believed that insulin can be stopped once blood sugars are under control contrary to this some believed once on insulin lifelong insulin is needed.
- Strict vegans had a strong opposition stating that insulin could be animal or other human origin
- Many of the myths and misconceptions were regarding insulin administration, storage and carrying to the work place and many believed only rich can afford.
- Many believed its association with end organ damage and amputation of limbs.
- Some of them related its use with social isolation and discrimination among family, relatives and co-workers at work place.
- Some patients felt sad depressed and related severity of disease to insulin dosage and it's initiation.

## CONCLUSION

As already known insulin is the most beneficial drug among diabetics, the barrier of acceptance of insulin injections as a regular a drug needs to be breached. Government and society carries a great responsibility in educating rural population about health and disease. Diabetes being major burden requires economical support by NGO's, Government and social service providers, including basic education about nature of disease, its progress and treatment modalities. In this regard peripheral health care workers (medical and paramedical) along with media and treating physician need to spend time with patients in clearing patients myths and misconceptions by asking leading questions and making them aware about insulin as a drug.

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