e-ISSN: 2249-7625

Print ISSN: 2249-7633

International Journal of

Pharmacy Practice & Drug Research

www.ijppdr.com

Research Article

ASSESSMENT OF TREATMENT SATISFACTION AND QUALITY OF LIFE IN DIABETES MELLITUS PATIENTS UNDER ADJUNCTIVE INSULIN THERAPY IN MEDICAL COLLEGE TEACHING HOSPITAL.

Chandni Nair A[1], Muizul Abedin[1], Priyanka Guha[1], Quratul Ain[1], G Parthasarathy[2].

[1]PharmD Interns, Department of Pharmacy Practice, The Oxford college of Pharmacy, Bengaluru, India.
[2]Professor and Head, Department of Pharmacy Practice, The Oxford college of Pharmacy, Bengaluru, India.

ABSTRACT

A prospective interventional study was developed to assess the treatment satisfaction and quality of life in patients under adjunctive insulin therapy. A total of 80 patients were counselled using approved and licensed questionnaires such as Diabetes Treatment Satisfaction Questionnaire (DTSQ) and Quality Of Life Instrument for Indian Diabetes Patients (QOLID). Subjects were diagnosed with diabetes and who were on therapy of both insulin and hypoglycaemic agents, admitted to the hospital were taken as participants for the study. The patients were assessed with the questionnaires and counselled them with the necessary information. Treatment Satisfaction and Quality of life were measured before and after patient counseling to see the improvement in their quality of life. QOLID consists of 8 domains, every domain has a mean total of 80 patients in which the total mean of post counseling was found to be greater significance than the pre counseling which shows there was an improvement in quality of life of the patients. The mean total of pre counseling was found to be 4070.93 and post counseling was found to be 6384.17. DTSQ consists of a 6 items scale assessing treatment satisfaction and 2 items assessing the perceived frequency of hypoglycemia ad hyperglycemia. The results were analyzed statistically for DTSQ and QOLID and the outcome confirmed the improvement in the quality of life in patient's post counseling.

Keywords: Diabetes, Treatment Satisfaction, Quality of life, Adjunctive Therapy.

INTRODUCTION

Diabetes mellitus:

Diabetes mellitus (DM), disorder which is characterized by the presence of hyperglycemia because of defective insulin secretion, defective insulin action or both. Prolonged diabetes may lead to both Macro and microvascular complications.

Adjunctive insulin therapy

Access this article online

Home page: http://ijppdr.com//

DOI: http://dx.doi.org/10.21276/ijppdr.2020.10.1.5

Quick Response code

Received:**27.12.19** **Revised**:12.01.20 **Accepted**:25.01.20

Corresponding Author

Dr. G Parthasarathy
Department of Pharmacy Practice, The Oxford College of Pharmacy, Hongasandra, Bangalore-560068, Karnataka, India
Email : mypartha@gmail.com

Despite treatment with insulin therapy, glycaemicoals don't seem to be always met, and insulin therapy is usually limited by adverse effects, including hypoglycemia and weight gain. Several adjunctive therapies are evaluated together with insulin in patients with T1DM to enhance glycaemic control while minimizing adverse effects and to work out potential benefits in T1DM based on their mechanisms of action and AE profiles in type 1 DM (T2DM)[(2)]

Need for adjunctive therapy

The long- and short-acting insulin derivatives mimic the insulin release in the body in a simpler way than human insulin, leading to better metabolic control and lower hypoglycemia rates. Hence, diabetic control

can be achieved by adjunctive insulin therapy.[3]

Intensive glucose control can decrease the risk of microvascular and macrovascular complications in T1DM, but often causes undesirable adverse effects (AEs), including increased risk of hypoglycemia, weight gain, higher insulin doses and frequent injections. Most of the patients with T1DM are facing difficulty in controlling the glucose level even after the improvements in insulin administration. Therefore, the adjunctive therapies for patients with T1DM are preferred.[4]

Adjunctive therapies not only reduces the multiple insulin doses but also reduces the financial burden for the patients.[5]

The adjunct therapy aims in achieving optimal glycemic levels, reducing the risk of hypoglycemia, weight loss and providing better quality of life.[6] While adjunct therapies have shown beneficial effects in these various categories, some safety concerns remain. For example, SGLT inhibitors are associated with an increased risk of diabetic ketoacidosis (DKA)[7]; therefore, health care providers and patients need to weigh up the potential benefits and risks.

Assessment of treatment satisfaction, quality of life in DM

For chronic illnesses like DM, where there's no cure, it's important to determine that therapy really makes people feel better. A Study that analyze the standard of life (QOL) is important during a group of diabetic patients without major complications. Diabetes may affect the patients physical functioning and their quality of life significantly. DM put a considerable burden on affected individuals by influencing physical, psychological and social aspects of QOL.

Optimal glycemic levels not only improves the quality of life but also prevents the macro and micro vascular complications. This end-point should be a way more important target for healthcare interventions.[2]

QOLID Questionnaire:

It is a validated and reliability study designed and developed with a set of questionnaires divided into three stages having the intention of including all aspects of diabetes. The questionnaire consists of 8 domains and 34 items, used for assessment of quality of life of Indian patients with diabetes.

DTSQ Questionnaire:

The DTSQ is recommended for measuring patients satisfaction in diabetes treatment [1,2]. It has six domains which assess treatment satisfaction in Diabetes.

METHODOLOGY

This is a prospective observational study conducted in The Oxford Medical College Bangalore. The study samples were collected from both the general medical Ward and General Surgery Department. A total of 80 patients who were admitted in the departments were interviewed using structured interview questionnaire which was pre-designed, the QOLID Questionnaire which is a set of 34 items belonging to 8 domains and also the DTSQ Questionnaire.

Methods of data collection

- **Study Design, Source of Data And Study Setting:-**
  A Prospective Observationalstudy was conducted on the inpatients admitted in The Oxford Medical College and Research Centre
- **Sampling size and technique:-**

A sample size of 80 patients of female was included in the study. Sample size is calculated by

$$X = Z^2 P (1-P) / e^2$$

$$n = N X / X+N-1$$

- **Sampling Criteria:-**
  Inpatients and Outpatients for the treatment of diabetes and the Patients who are prescribed with both insulin and oral hypoglycaemic agents were included in the study.
  Pediatrics Patients, Pregnant and Lactating Women and Uncooperative patients were excluded from the study.

The Study was conducted by obtaining the consent from the patient through informed consent form in English and Kannada languages to prevent the language barrier.The demographics of the patient (Name, Age, Sex, etc.) and the date regarding past medical history, past medication history, diagnosis, prescribed drugs, etc through data entry form was collected. Glucose levels was evaluated from the obtained laboratory data. Study of degree of treatment satisfaction among diabetic patients using DTSQ (Diabetes Treatment Satisfaction Questionnaire) was carried out. Patient Counseling was given orally to the patients and health related quality of life was assessed using QOLID (Quality of Life Instrument for Indian Diabetes Patients) questionnaire. Patient Follow up and counseling was done after 1 week by using Leaflet to improve the quality of life. The obtained data were subjected for statistical analysis to correlate the variables.

RESULTS

This study encompassed a total of 80 cases, taken from the general medicine department at The Oxford Medical College, Hospital and Research Centre, Attibele, Bengaluru.

Distribution of patients based on age

The patient distribution has been carried out age wise and the following is the data evaluated

Age wise distribution of the patients showed that majority of the patients were belonging to the age group 31-60 (71%) followed by more than 60 years age group

(24%) and the least number of patients comes under age group of 18-30 (5 %). According to the CDC's 2017 National Diabetes Statistics Report, adults aged 45 to 64 were the most diagnosed age group for diabetes.[8]

Distribution of patients in gender

The following data represents the distribution based on the gender of patients.

Above data reveals that 66 % of male patients have diabetes followed by 34 % of female patients which is similar to the study conducted by Manjeet Kumar et.al, which shows that the incidence of diabetes among males was found to be higher (11.8%) than females (10.1%).[9]

Distribution of patient's blood glucose level (HbA1c)

The following is the data evaluated for the distribution based on HbA1c level among patients.

The above data shows that most of diabetic patients have HbA1c level more than 7 which was similar to the study conducted by Surendra S Borgharkar that shows about 76.6% of patients had (HbA1c) ≥7% among Indian population. [10]

Distribution of patients based on their socio economic status

The following is the data evaluated for the distribution based on the Socio Economic Statusof the patients.

Most of the study population were in poor low socioeconomic status holders (47 %) than lower middle socioeconomic status which is similar to the study conducted by KirtiVinayakKinge that showed most of the patients falls in low socioeconomic status (41%) than lower middle socioeconomic (9.8%). [11]

Distribution of Patients based on Residence

The following is the data evaluated for the distribution based on the residence of patients

From the above table it is evident that most of the diabetic patients are from urban area (58%) than patients from ruralarea (42%) which is similar to the study conducted by Viswanathan Mohan.et.al, showed that urban residents had the greater prevalence of diabetes (11.3%) than the rural residents (0.7%). [12]

Distribution as per co-morbidity

The following is the data evaluated for the distribution based on the co-morbidity among patients.

From the above table it is evident that the patients with Nephrotic Syndrome were most affected followed by hypertension and other co-morbid conditions which is similar to the study conducted by VivekPodder showed the greater incidence of diabetes in patients with nephrotic syndrome (95.2%) followed by hypertension (67.2%). [13]

QOLID maximum score

The significant value show there is an improvement in the Quality of life of the patients after counseling.

DTSQ maximum score

The significant value show there is an improvement in the treatment satisfaction among the diabetic patients after patient counseling.

Table1. Age wise distribution of patients

Age Group	**No. Patients**	**Percentage**
18-30	4	5%
31-60	57	71%
>60	19	24%
Grand Total	**80**	**100%**

Table 2.1: Distribution of diabetic patient's based on gender

Gender	**No. of Patient**	**Percentage**
Female	27	34%
Male	53	66%
Grand Total	**80**	**100%**

Table 4.1: Distribution of Patients Blood Glucose Level (HbA1c)

HbA1c (%)	Total No. of Patients (N=80)	Percentage (%)
<7 (Normal)	8	10
7-8 (Moderately High)	23	28.75
>8 (High)	**49**	**61.25**

Table 5. Distribution based on socioeconomic status

Socio Economic Status	**No. of Patients**	**Percentage**
High	6	7.50%

Low	38	47.50%
Moderate	35	43.75%
Lower Middle Class	1	1.25%
Grand Total	**80**	**100.00%**

Table 5.1: Distribution of Patients based on Residence

Residence	No. Of total patient(n=80)	Percentage (%)
URBAN	46	42
RURAL	34	58

Table 6.Distribution as per co-morbidity.

CO-Morbidity	No. of Patients	Percentage
Hypertension	5	6.25%
NS	74	92.50%
OHA'S WITH THP	1	1.25%
Grand Total	**80**	**100.00%**

QOLID maximum score

QOLID maximum score	t-value	p-value
Quality of Life Based Questions	19.17	<.00001

DTSQ maximum score

DTSQ maximum score	t-value	p-value
Treatment Satisfaction Based Questions	46.7	<.00001

CONCLUSION

In our prospective interventional study, we reached to a conclusion that after counseling there was improvement in patient's quality of life and treatment satisfaction. The patients got stricter with diet, medication and hygiene after a round of education/counseling. Most of the patients being poor and illiterate were unaware of assessment of diabetes management. With the utilization of both the questionnaire there was an impact and self-understanding among the patient's behavioural practice in diabetes management during counseling period. During the post counseling study period we found out the majority of the patients had a better life style modification and understanding of diabetes management practice as compared to the their initial stages in pre counseling period.

ACKNOWLEDGEMENT

We would wish to express our sincere gratitude to the Lord Almighty for his blessings and also the Principal, Guide and Staff, The Oxford College of Pharmacy, Dr.K.G PrakashHOD and Doctors of Department of Surgery and the Hospital Authorities of The Oxford Medical College and Research Centre, Bangalore for providing facility to complete our research and for the constant support and cooperation.

REFERENCES

1. Manisha C Gholap, Vaishali R Mohite, Mahesh BhupalChendake, Prabhuswami, Heremath.. A study to access the knowledge and practice of self-administration of injection among diabetes patient attending outpatient department of Krishna hospital, karad. **IJHSR**. 2016;6[9]:277-82
2. Harris K, Boland C, Meade L, Battise D. Adjunctive therapy for glucose control in patients with type 1 diabetes. . **Diabetes Metab. Syndr. Obes**. 2018; 11:159-73.
3. Kalra S, Gupta Y. Ultra-fast acting insulin analogues. Recent **Pat EndocrMetab Immune Drug Discov**. 2014;8(2):117–23.
4. Livingstone R, Boyle JG, Petrie JR; REMOVAL Study Team. A new perspective on metformin therapy in type 1 diabetes. **Diabetologia**. 2017;60(9):1594–600.
5. Kähler P, et al;, Targeting intensive versus conventional glycaemic control for type 1 diabetes mellitus: a systematic review with meta-analyses and trial sequential analyses of randomised clinical trials. **BMJ open**. 2014;4(8):1-22.
6. Bode BW, GargSK: The emerging role of adjunctive noninsulin antihyperglycemic therapy in the management of type 1 diabetes. **EndocrPract** 2016;22(2):220–30.
7. Harris K, Boland C, Meade L, et al.: Adjunctive therapy for glucose control in patients with type 1 diabetes. **Diabetes MetabSyndrObes** 2018;11:159–73.
8. Cdc.gov. 2021. National Diabetes Statistics Report, 2020 | CDC. [online]

9. Kumar M, Shivgotra VK, Nanda H. GENDER-WISE PREVALENCE OF DIABETES AMONG THE INDIAN POPULATION: A META ANALYSIS USING R SOFTWARE. Journal of Critical Reviews. 2020;7(7):683-91.
10. Borgharkar SS, Das SS. Real-world evidence of glycemic control among patients with type 2 diabetes mellitus in India: the TIGHT study. BMJ Open Diabetes Research and Care. 2019 Jul 1;7(1):1-8.
11. Kinge KV, Association between socioeconomic status and Diabetes Mellitus in Perimenopausal Women in an Urban Slum of Mumbai:IJBABN.2015; 6(12): 853-855.
12. Mohan V,et.al,. Urban rural differences in prevalence of self-reported diabetes in India—The WHO–ICMR Indian NCD risk factor surveillance.Diabetes Res ClinPract. 2008 Apr 1;80(1):159-68.
13. PodderV,et al,. Prevalence and awareness of stroke and other comorbidities associated with diabetes in Northwest India.J Neurosci Rural Pract. 2020 Jul;11(03):467-73.

Cite this article:
Chandni Nair A,MuizulAbedin, PriyankaGuha,Quratulain, G Parthasarathy. Assessment Of Treatment Satisfaction And Quality Of Life In Diabetes Mellitus Patients Under Adjunctive Insulin Therapy In Medical College Teaching Hospital.*InternationalJournal of Pharmacy Practice and Drug Research*,2020;10(1):27-33.DOI:**http://dx.doi.org/10.21276/ijppdr.2020.10.1.5**