

ORIGINAL ARTICLE

Knowledge of Hypoglycemic Symptoms and their Self-Management among patients with Type II Diabetes Mellitus

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ABSTRACT

Aim: To determine knowledge of hypoglycaemic symptoms & their self-management among pts with type II diabetes mellitus.

Study Design: Descriptive, cross-sectional.

Place and duration of study: OPD Clinic of Department of Medicine, Chandka Medical College Hospital Larkana from 23rd May 2019 to 22nd November 2019.

Methodology: One hundred and thirty five patients with type II diabetes mellitus of age 35- 60 years were selected. Patients with type I DM and neuro-psychiatric illness were excluded. The symptoms of hypoglycemia and their responses to those symptoms were recorded.

Results: The mean age of 47.07±6.04 years and majority of the patients 83 (61.48%) were between 46-60 years of age. Seventy two (53.33%) were male and 63 (46.67%) were females. Mean duration of diabetes mellitus was 6.90±3.86 years. Adequate knowledge of hypoglycemic symptoms and their self-management among patients with type II diabetes mellitus was found in 62 (56.9%) patients.

Conclusion: Hypoglycemic patients are significantly unaware of their condition and have a very low knowledge about hypoglycemia and its self-management.

Keywords: Type II diabetes, Hypoglycemic symptoms, Knowledge

INTRODUCTION

Diabetes mellitus (DM) is a most common disease which is categorized in to three major types. The type I diabetes is insulin dependent as mostly present at very young age. Type II is non-insulin dependent DM with an adult onset; whereas the third type of DM is gestational diabetes which occur in a pregnant women^{1,2}. The global prevalence of DM is 10 to 14%² with more cases of type II diabetes. Type II DM occurs in adult patients and is featured with high levels of blood glucose due to insulin resistance in the body³.

Diabetes mellitus II is a non-communicable disorder related to metabolic syndrome. There is a worldwide surge in its cases with more vulnerable population residing in developing countries⁴. Patients who suffer from type II diabetes need to strictly monitor their sugar levels for avoiding DM complications and mortality. There are many treatment options for DM patients. Patients with DM or diabetes related renal disease often face hypoglycemia during course of treatment. This could be prevented by monitoring treatment and controlling factors predisposing to hypoglycemia. A linear association between cardiovascular disease and hypoglycemia has been reported in literature.⁵ It has also been evidently proven that hypoglycemia can turn fatal and life threatening in situation where left untreated⁶.

Education regarding diabetes management is fundamentally required. This knowledge should highlight the information regarding treatment compliance, management of weight, exercise as well as diet. Further awareness against factors causing hypoglycemia and its prevention and its timely management are also mandatory.⁷ Hypoglycemic symptoms are multifactorial and identifying them become difficult in elderly patients.⁸ Hypoglycemia if left untreated due to lack of knowledge and awareness about its symptoms results into hypoglycemic episodes presenting with seizure, brain damage and fainting. AUSA study elaborated that 2.5% DM patients between 25 to 65 years suffered from hypoglycemic event per year with 0.5% additionally those who faced life threatening hypoglycemic incident⁹.

The present study was conducted to highlight the need of self-education in patients with DM for preventing them from hypoglycemia and its severe consequences so as to improve their life quality.

MATERIALS AND METHODS

This descriptive, cross-sectional study was conducted at OPD Clinic of Medicine, Chandka Medical College Hospital Larkana from 23rd May 2019 to 22nd November 2019 after permission from IRB. One hundred and thirty five patients with type II diabetes mellitus of age 35-60 years were selected. Patients with type I DM and neuro-psychiatric illness were excluded. The symptoms of hypoglycemia and their responses to those symptoms were recorded. Each patient was informed through a written informed consent in plain language about the study and a formal approval was taken from them. The patient was told about confidentiality of their information. A well-structured proforma^{10,11} was designed in English, Sindhi/Urdu languages and used for entering data information regarding demographic, clinical, hypoglycemia symptoms, and patient's response. The data was entered and analyzed in SPSS-25. Inferential analysis was performed using Chi square associations of appropriate knowledge with different variables age, gender, residence, education and duration of diabetes. The significant level was set at 0.01.

RESULTS

Age range in this study was from 35 to 60 years with mean age of 47.07±6.04 years. Majority of the patients i.e. 83 (61.48%) were between 46-60 years of age (Table 1). Seventy two (53.33%) were male and 63 (46.67%) were females with male to female ratio of 1.1:1. There were more males than females (Table 2). Mean duration of diabetes mellitus was 6.90±3.86 years. Mean hypoglycemic questionnaire score was 10.31±3.38. Adequate knowledge of hypoglycemic symptoms and their self-management among patients with type II diabetes mellitus was found in 79 (58.52%) patients. Stratification of knowledge with respect to age groups, duration of disease and education is shown in Table 3.

Table 1: Distribution of age among DM pts with their hypoglycemia status

Age (years)	Knowledge		P value
	Adequate	Inadequate	
35-45	33	19	0.366
46-60	46	37	

Table 2: Distribution of gender among DM patients

Gender	No.	%
Male	72	53.3
Female	63	46.7

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Table 3: Stratification of knowledge with respect to age, duration of diabetes and level of education

Variable	Knowledge		P value
	Adequate	Inadequate	
Duration of diabetes (years)			0.081
≤ 5	30	44	
≥ 5	32	29	
Level of education			0.183
Uneducated	10	9	
Primary	8	10	
Middle	12	12	
Intermediate	20	16	
Graduate	19	19	

DISCUSSION

Hypoglycemia is considered as a rate-limiting complication in reaching the goal of glycemic control and its management¹². Significant hypoglycemia episodes results in poor glycemic regulation, cardiovascular complexities and cerebral/vascular morbidities¹³.

Mega trial studies on controlling cardiovascular event in DM has proven hypoglycemia as a predictor of mortality^{14,15}. American Diabetes Association emphasizes on reduction of hypoglycemia in DM patients. Hypoglycemia presents with varied symptoms. Symptoms are often not specific and vary with elderly age. Consequently, it becomes highly important that patients identify the hypoglycemia symptoms and have sufficient knowledge about managing them at right time. A study by American Association of clinical endocrinologist on two thousand patients showed that almost half of total patients have suffered from hypoglycemia with majority of those patients who were not aware of its consequences. This gap in understanding the condition need to be timely addressed.¹⁶ Another study focused on the fact that 55% of DM patients were between 40 to 60 years of age. This study lime lighted the fact that elderly patients were less aware about their hypoglycemic condition, in comparison with those who were in middle age group.¹⁷ However, this study did not show any association between hypoglycemia symptoms knowledge and age¹⁸.

In present study 79 (58.52%) patients with type II DM were having adequate knowledge and awareness about hypoglycemia self-management. Shriram et al¹⁹ study revealed that 66.1% DM patients were fully aware of their hypoglycemia condition with those patients who were educated to be more aware than less educated patients. Other studies also elaborated that 54% patients were aware of their hypoglycemia with 49% of those DM patients who kept glucose sachet as an emergency management protocol against hypoglycemia. Patients aware of their hypoglycemia symptoms, diabetes and risk associated with DM are reported to be more literate than patients who are low in literacy level.²⁰⁻²³

Contradictory to above statement the present study did not show a significant association between education level and knowledge about self-management of hypoglycemia. Similar findings were observed in Chinnappan et al²⁴ study who also described no relation between educational level and hypoglycemic awareness. Additionally a strong association has been recorded in increase duration of DM with hypoglycemic self-management awareness²⁵. Conflictingly, this was not observed in our current study and in a study reported by Shriram et al¹⁹.

CONCLUSION

The adequate knowledge of hypoglycemic symptoms and their self-management among patients with type II diabetes mellitus is quite low. There is an urgent requirement of coordination between clinician, health care workers and DM patients for identifying causes of hypoglycemia and taking suitable steps in preventing its occurrence. This will improve the quality of life and psychosocial aspects of health inpatient with further enhancing confidence and

compliance with DM treatment so as to decrease its related complexities.

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