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Study on Awareness of Symptoms of Hypoglycaemia & Early Management among Patients with Diabetes.

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Abstract:
Background: *Hypoglycaemia mostly occurs in diabetics on medications.The lack of awareness on hypoglycaemic symptoms among patients may delay its identification and treatment.*
Aims & objective: *(i) Study on awareness of symptoms of hypoglycaemia among patients with diabetes. (ii) Study the knowledge in early management of hypoglycaemia among patients with diabetes.*
Materials & methods: *This is a descriptive study done among Type-2 diabetes patients attending the outpatient and inpatient services of a tertiary teaching hospital in Mangalore. Patient with diabetes for over five years, who fulfils the selection criteria, were included for the study. After obtaining an informed consent, they were administered the questionnaire to mark their responses. Their knowledge on the symptoms, signs and treatment of hypoglycaemia were compared.Inclusion criteria:Patients with diabetes for more than 5 years on treatment with oral hypoglycaemic drugs or insulin were included.Exclusion criteria:Patients admitted in intensive care unit and those with neuro-psychiatric illness. The data collected were analysed by frequency and percentage.*
Results: *A descriptive study was conducted among 100 diabetic patients. Among them majority (54%) had average awareness about symptoms of hypoglycemia. Only 39% had got their diabetic education classes, mainly from their doctor. Regarding management of hypoglycaemia, 49% patients preferred taking glucose powder or sugar with water as an immediate measure. Majority of patients (58%) felt going to the casualty or emergency department was the right option for hypoglycemia. The awareness was higher among literate subjects about hypoglycaemia symptoms.*
Conclusion: *Awareness about hypoglycaemia was average among diabetics. But regarding hospital management patient felt going to the casualty or emergency department for further treatment is ideal, which is the right option. Hence the primary physician has an important role in educating diabetics on hypoglycaemia, so that hypoglycaemic episodes and morbidity could be prevented.*
Keywords: *Diabetes mellitus,hypoglycaemia, awareness, management, oral hypoglycaemic agents, insulin.*

I. Introduction:

Hypoglycaemia mostly occurs in diabetics on medications. The symptoms of hypoglycaemic symptoms among patients may delay its identification and treatment.Neglecting the symptoms of hypoglycaemia and delaying treatment could cause poorer outcomes or morbidity. We propose to study among diabetics on their awareness on hypoglycaemic symptoms and knowledge on its early management.

II. Aims & objective:

(i) Study on awareness of symptoms of hypoglycaemia among patients with diabetes.
(ii) Study the knowledge in early management among patients with diabetes.

III. Materials and methods:

Source of data: Diabetic patients visiting the outpatient and inpatient services of tertiary teaching Hospital in Mangaluru, were included for this study.
Study design: This is a descriptive study done on Type-2 diabetes patients.
Methods: A patient with diabetes for five or more years, who fulfils the selection criteria, was included for the study. After describing the purpose of the study, informed consent for participation was obtained from the patient. They were administered the questionnaire separately and asked to make responses in the questionnaire sheet directly. They wereprovided help, in the language they best understand, to interpret the questions and to mark their responses.
The level of knowledge the patient is having was studied. The level of knowledge was also compared to their literacy.

Inclusion criteria:
1. Diabetes for 5years or more.

2. Patients on oral hypoglycaemic agents or insulin.

Exclusion criteria
1. Patients admitted in intensive care unit
2. Patients with neuro-psychiatric illness.

IV. Analysis:

The data collected was transferred to an Excel data sheet and analysed by frequency, mean, ratios and percentage.

V. Results:

A descriptive study was conducted among 100 diabetic patients.55 % fell between the age group of 40-60 years. On considering the sex distribution 58% male and 42% female diabetics were found to be included in the study. Majority patients were on treatment for diabetes from 5-10 years (57%). 76% were regular with treatment and 59% experienced symptoms of hypoglycaemia. Most common symptoms experienced were fatigue (88%), headache (77%), and excessive symptoms of hypoglycaemia (69%). Among them majority of them (54%) had average awareness about symptoms of hypoglycemia. Only 39% had got their diabetic education classes, source mainly was their doctor. Regarding management of hypoglycemia, 49% patients preferred taking glucose powder or sugar with water as an immediate measure. Majority of patients (58%) felt going to the casualty or emergency department was the right option for hypoglycemia. More the patient was literate more aware was he about the hypoglycemic symptoms.

VI. Discussion:

Diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetics. According to Wild et al[1] the prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with a maximum increase in India. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India.[2]

A descriptive study was conducted among 100 diabetic patients out of whom a majority (55%) fell between the age group of 40-60 years. Study conducted in Germany showed that older group of people showed reduced awareness of hypoglycaemia compared to the middle aged group, hence hypoglycaemic symptoms were more common in elderly aged group.[3] In a study conducted in San Francisco among 783 adults with diabetes mellitus on a 12 years follow up, older adult with diabetes who develop dementia had greater risk of having hypoglycemia when compared to those who did not develop dementia.[4]Thus elderly have higher risk of developing hypoglycemia when compared to middle aged group. Occurrence of dementia among elderly could be one among the reasons for frequent development of hypoglycemic symptoms. Accidental consumption of higher doses of OHA's or insulin may lead to hypoglycemia. The present study showed elderly patients to have more awareness on hypoglycaemia as compared to young patients.

The sex distribution of male and female diabetics was found to be 58 and 41 % respectively. Majority patients were on treatment for diabetes from 5-10 years (57%). Among the participants 76% were regular with treatment and 59% experienced symptoms of hypoglycaemia. Most common symptoms experienced were fatigue (88%), headache (77%), excessive sweating (69%). In a study done at Edinburgh, the prevalence of poor awareness of hypoglycaemia was noticed among diabetics on insulin treatment. [5]Leese GP et al from UK in their 12 month study noted severe hypoglycaemia among type 2 diabetics treated with insulin as compared to those with OHA's.[6]Whereas in the present study, patients on insulin had better awareness (60%) on hypoglycaemia when compared to those on OHA's. This might be because of regular follow up of patients with their doctors to titrate their insulin doses and probably they get physician dependent information. Regular follow up with family physician is important to make dietary, therapeutic or lifestyle advices to prevent hyperglycaemia and hypoglycaemia. Symptoms of hypoglycaemia could be easily identified by physician from patient's history and thus could prevent grave hypoglycaemic episodes.

Patients on irregular treatment experienced hypoglycemic symptoms more frequently when compared to patients on regular medications. In this study majority (54%) of diabetics had only average awareness on hypoglycaemic symptoms. Only 39% had got their diabetic education from their doctors regarding management of Hypoglycaemia.Among the participants 49% preferred taking glucose powder or sugar dissolved in water as an immediate measure for their hypoglycaemic symptoms. Majority (58%) felt going to hospital emergency department was the right option for immediate management of Hypoglycaemia.The more literate the patient was, he could identify symptoms of hypoglycaemia and take corrective measures to avoid severe hypoglycemia. A study conducted in England among Type-2 diabetes, 5.9% patients on OHA's in the age group of 40 to 65 years experienced hypoglycaemic symptoms. None of these patients required hospitalisation as they aware on the immediate management of hypoglycaemia as they received good diabetic education.[7]Ya-Chun et al studied

1195 patients with type 2 DM and observed 7.4% to have experienced severe hypoglycaemia. Patients on insulin experienced hypoglycaemia more frequently (17.8%) as compared to patients on OHA's (6.3%). The risk factors fordeveloping severe hypoglycaemia were older age, lower literacy level and insulin therapy.[8]Zammitt NN and Frier BM observed an increased risk of hypoglycemia among older adults and thosewith diabetes for many years.[9]

The immediate treatment of hypoglycemia should be known by all the diabetic patients, so that need for hospitalisation could be avoided. Illiterate patients and elderly patients with dementia must be more educated about hypoglycemia. Thus improving patientskills self-management, self-monitoring of sugar and adjustmentsof dose based on requirements can reduce the risk of hypoglycemia. Severe hypoglycemia is usually associated with increased mortality, impaired cognitive function and affects patient's quality of life. Frequent hypoglycaemicspells can burden the existing healthcare facilities and productivity at workplace can be affected.[10]

VII. Conclusion:

Awareness onhypoglycaemia symptoms and its early managementwas average among diabetics. Initiation of home care followed by hospitalised care is the most ideal way to prevent severe spells of hypoglycaemia. The primary care physician has an important role in educating diabetics on hypoglycaemia, so that hypoglycemic episodes and morbidity could be reduced or prevented.

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