PREVALENCE OF HYPERGLYCEMIA AMONG PATIENTS PRESENTING IN EMERGENCY DEPARTMENT

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ABSTRACT:
Hyperglycemia is a condition in which an excessive amount of glucose circulates in the blood plasma. This is generally a blood sugar level higher than 11.1 mmol/l (200 mg/dl), but symptoms may not start to become noticeable until even higher values such as 13.9–16.7 mmol/l (~250–300 mg/dl). This cross-sectional study was conducted among the patients presenting in the emergency department of different hospitals. Name, age, gender, symptoms and levels of random sugar were noted on a predefined proforma. All the data was entered and analyzed with SPSS Ver. 23.0. A total of 100 patients presenting in the emergency department were included in this study i.e., 50 males (50%) and 50 females (50%). The mean age of the patients was 33.12±2.12 years. Out of these patients, nine patients were having hyperglycemia. Further investigations and management were planned accordingly.

Keyword: Hyperglycemia
INTRODUCTION:
Hyperglycemia is a condition in which an excessive amount of glucose circulates in the blood plasma. This is generally a blood sugar level higher than 11.1 mmol/l (200 mg/dl), but symptoms may not start to become noticeable until even higher values such as 13.9–16.7 mmol/l (~250–300 mg/dl). A subject with a consistent range between ~5.6 and ~7 mmol/l (100–126 mg/dl) (American Diabetes Association guidelines) is considered slightly hyperglycemic, and above 7 mmol/l (126 mg/dl) is generally held to have diabetes. For diabetics, glucose levels that are too hyperglycemic can vary from person to person, mainly due to the person’s renal threshold of glucose and overall glucose tolerance. On average, however, chronic levels above 10–12 mmol/L (180–216 mg/dl) can produce noticeable organ damage over time. The degree of hyperglycemia can change over time depending on the metabolic cause, for example, impaired glucose tolerance or fasting glucose, and it can depend on treatment. Temporary hyperglycemia is often benign and asymptomatic. Blood glucose levels can rise well above normal and cause pathological and functional changes for significant periods without producing any permanent effects or symptoms. During this asymptomatic period, an abnormality in carbohydrate metabolism can occur which can be tested by measuring plasma glucose.
Chronic hyperglycemia at above normal levels can produce a very wide variety of serious complications over a period of years, including kidney damage, neurological damage, cardiovascular damage, damage to the retina or damage to feet and legs. Diabetic neuropathy may be a result of long-term hyperglycemia. Impairment of growth and susceptibility to certain infection can occur as a result of chronic hyperglycemia. Acute hyperglycemia involving glucose levels that are extremely high is a medical emergency and can rapidly produce serious complications (such as fluid loss through osmotic diuresis). It is most often seen in persons who have uncontrolled insulin-dependent diabetes (1-3).
MATERIAL AND METHODS:
This cross-sectional study was conducted among the patients presenting in the emergency department of different hospitals. Name, age, gender, symptoms and levels of random sugar were noted on a predefined proforma. All the data was entered and analyzed with SPSS Ver. 23.0. The quantitative variables were presented as mean and standard deviation. The qualitative variables were presented as frequency and percentages.

RESULTS:
A total of 100 patients presenting in the emergency department were included in this study i.e., 50 males (50%) and 50 females (50%). The mean age of the patients was 33.12±2.12 years. Out of these patients, nine patients were having hyperglycemia. Further investigations and management were planned accordingly.

DISCUSSION:
Chronic hyperglycemia that persists even in fasting states is most caused by diabetes mellitus. In fact, chronic hyperglycemia is the defining characteristic of the disease. Intermittent hyperglycemia may be present in prediabetic states. Acute episodes of hyperglycemia without an obvious cause may indicate developing diabetes or a predisposition to the disorder. In diabetes mellitus, hyperglycemia is usually caused by low insulin levels (diabetes mellitus type 1) and/or by resistance to insulin at the cellular level (diabetes mellitus type 2), depending on the type and state of the disease. Low insulin levels and/or insulin resistance prevent the body from converting glucose into glycogen (a starch-like source of energy stored mostly in the liver), which in turn makes it difficult or impossible to remove excess glucose from the blood. With normal glucose levels, the total amount of glucose in the blood at any given moment is only enough to provide energy to the body for 20–30 minutes, and so glucose levels must be precisely maintained by the body's internal
control mechanisms. When the mechanisms fail in a way that allows glucose to rise to abnormal levels, hyperglycemia is the result. Ketoacidosis may be the first symptom of immune-mediated diabetes, particularly in children and adolescents. Also, patients with immune-mediated diabetes, can change from modest fasting hyperglycemia to severe hyperglycemia and even ketoacidosis as a result of stress or an infection. Treatment of hyperglycemia requires elimination of the underlying cause, such as diabetes. Acute hyperglycemia can be treated by direct administration of insulin in most cases. Severe hyperglycemia can be treated with oral hypoglycemic therapy and lifestyle modification. Those with hyperglycaemia can be treated using sulphonylureas or metformin or both. These drugs help by improving glycemic control. Dipeptidyl peptidase 4 inhibitor alone or in combination with basal insulin can be used as a treatment for hyperglycemia with patients still in hospital (4-6).

REFERENCES:


