ORIGINAL RESEARCH

Analysis of clinical profile of hypoglycemia in the emergency department

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ABSTRACT

Background: One of the main reasons people attend the emergency department (ED) is hypoglycemia. Additionally, it is the most prevalent and readily avoidable endocrine emergency. The present study was conducted to assess clinical profile of hypoglycemic patients in emergency department. **Materials & Methods:** 76 patients of hypoglycaemia of both genders were included. Assessment of blood glucose concentration was determined by Accu-Check Gluco-stix. **Results:** Themean age was 57.1 years, HGT was 45.2, pulse was 90.2 beats per minute, systolic blood pressure was 132.5 mm Hg, diastolic blood pressure was 79.2 mm Hg and GCS was 10.5. Common symptoms were anorexia in 51, fever in 42, LOC in 59, fall in 37, AMS in 23, FND in 5, syncope in 12 and others in 10 cases. The difference was significant (P< 0.05). Common causes were OHA in 40, OHA+ insulin in 19, insulin in 7, others in 5, skipped meal in 4 and alcohol in 3 cases. The difference was significant (P< 0.05). **Conclusion:** When hypoglycemia is severe enough to warrant ED visits, it increases the risk of major events and unfavorable outcomes for people with diabetes. This is true for both insulin treatment and non-insulin glucose-lowering medications.

Key words: Emergency, Hypoglycemia, Insulin

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INTRODUCTION

One of the main reasons people attend the emergency department (ED) is hypoglycemia. Additionally, it is the most prevalent and readily avoidable endocrine emergency. There is always a chance that the incidence of hypoglycemia will rise proportionately to the rising prevalence of diabetes and the different methods of strict blood glucose control.[1] Every hypoglycemic episode should be appropriately treated in terms of etiological diagnosis and preventive actions because persistent hypoglycemia can result in considerable morbidity and even fatality.[2]

Old age, illness, chronic renal insufficiency, liver disorders, and recurring hypoglycemic episodes are some additional causes of hypoglycemia. It can cause convulsions, coma, death, and reduced cognitive function, among other symptoms. Although the effects of untreated hypoglycemia are well established, it is still unknown how frequently hypoglycemia actually manifests in both diabetic and non-diabetic people.[3] The many triggering factors, the variable clinical features, and the many settings of presentation and treatment—hospital, general practice, or home—could all be contributing factors to this confusion. Disparities between rural and urban populations could also play a role.Hypoglycemia unawareness may occur as a result of repeated hypoglycemic episodes that damage the counter-regulatory mechanism.[4] In addition to health-related quality of life problems with sleep, driving, work, and leisure activities involving exercise and travel, the short- and long-term consequences of diabetes-related hypoglycemia include the onset of acute cerebrovascular disease, myocardial infarction, neurocognitive dysfunction, retinal cell death, and vision loss.[5,6]The present study was conducted to assess clinical profile of hypoglycemic patients in emergency department.

MATERIALS & METHODS

The present study comprised of 76 patients of hypoglycaemia of both genders. All gave written consent for participation before starting the study.

Data such as name, age, sex etc. was recorded. Accu-Check Gluco-stix was used to measure the blood glucose level. A capillary blood glucose level of 70 mg/dL or lower was considered hypoglycemia. Following the proper management of the

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hypoglycemic episode, a record of the patient's admission or discharge was also made. Results were studied statistically. P value less than 0.05 was considered statistically significant.

RESULTS

Table I Patient characteristics

Parameters	Mean	SD
Age	57.1	13.2
HGT/RBS	45.2	14.3
Pulse rate	90.2	15.4
SystolicBP	132.5	24.1
DiastolicBP	79.2	11.5
GCS	10.5	3.5

Table I shows that mean age was 57.1 years, HGT was 45.2, pulse was 90.2 beats per minute, systolic blood pressure was 132.5 mm Hg, diastolic blood pressure was 79.2 mm Hg and GCS was 10.5.

Table II Assessment of clinical features

Clinical features	Number	P value
Anorexia	51	0.05
Fever	42	
LOC	59	
Fall	37	
AMS	23	
FND	5	
Syncope	12	
Others	10	

Table II, graph I shows that common symptoms were anorexia in 51, fever in 42, LOC in 59, fall in 37, AMS in 23, FND in 5, syncope in 12 and others in 10 cases. The difference was significant (P< 0.05).

Graph I Assessment of clinical features

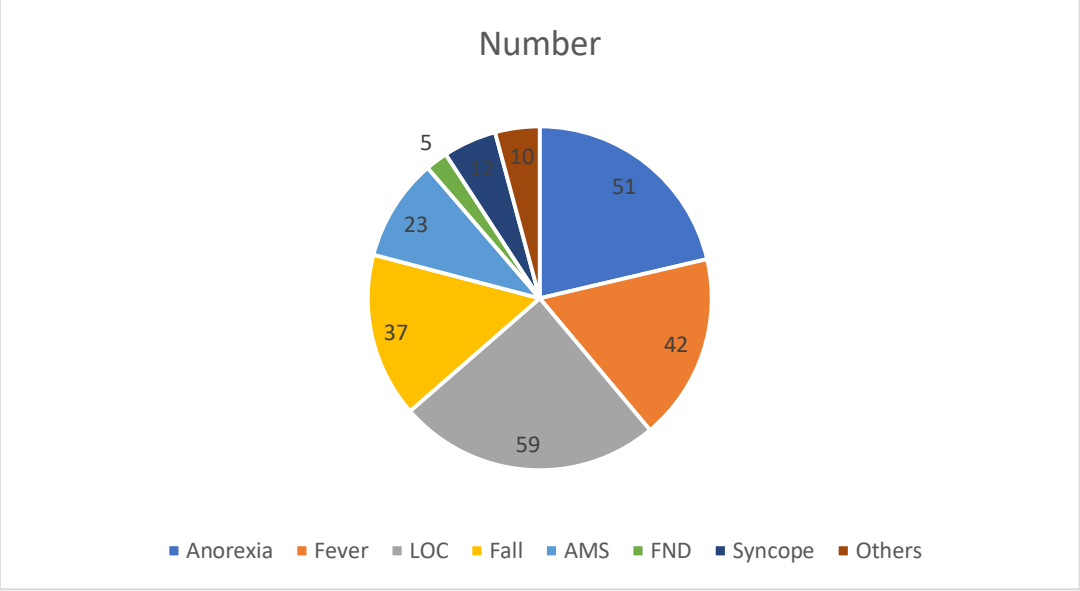

Table III Causes of hypoglycemia

Causes	Number	P value
OHA	40	0.01
OHA+INSULLIN	19	
Insulin	7	
Others	5	
Skippedmeal	4	
Alcohol	3	

Table III shows that common causes were OHA in 40, OHA+ insulin in 19, insulin in 7, others in 5, skipped meal in 4 and alcohol in 3 cases. The difference was significant (P< 0.05).

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DISCUSSION

Lethargy, disorientation, and organ failure are some of the mental health effects of hypoglycemia, an endocrine emergency.[7] Lack of proper nutrition, long-term alcohol misuse, drug interactions, increased physical activity, and prescription overdose (insulin/oral hypoglycemic agent) are common causes.[8] Autonomic and neuroglycopenic symptoms are unpleasant when hypoglycemia is mild.[10,11] SH is typically described as an incident that necessitates another person's help to recover. Among the causes are medications, hormonal imbalances, cancers, starvation, and renal failure.[12,13] Nonetheless, the most frequent cause of hypoglycemia is the hypoglycemic medications used to treat diabetes mellitus. The medical facilities in the area, as well as the sociocultural and economic standing of the populace, may also have an impact on the causes of hypoglycemia.[14,15]The present study was conducted to assess clinical profile of hypoglycemic patients in emergency department.

We found that themean age was 57.1 years, HGT was 45.2, pulse was 90.2 beats per minute, systolic blood pressure was 132.5 mm Hg, diastolic blood pressure was 79.2 mm Hg and GCS was 10.5. Common symptoms were anorexia in 51, fever in 42, LOC in 59, fall in 37, AMS in 23, FND in 5, syncope in 12 and others in 10 cases. Moisan et al[16]described the burden of severe hypoglycemia among new users of insulin and oral antidiabetes drugs (OAD) in terms of 2 hypoglycemia-related outcomes: emergency department (ED) visit and hospitalization.A total of 188 659 new users of antidiabetes treatment were included in the cohort. A total of 3575 (1.9%) individuals had at least 1 hypoglycemia-related ED visit whereas 194 (0.1%) had at least 1 hypoglycemia-related hospitalization. Incidence rates for the occurrence of hypoglycemia-related ED visits and hypoglycemia-related hospitalizations were 5.2 and 0.3 cases per 1000 patient years, respectively.

We observed that common causes were OHA in 40, OHA+ insulin in 19, insulin in 7, others in 5, skipped meal in 4 and alcohol in 3 cases. Su CC et al[17] in their study etiologies of acute hypoglycemia (< 2.8 mmol/L) in adult emergency patients were assessed to provide more proper and prompt management. There were 228 hypoglycemic patients (112 women and 116 men, ranging in age from 22 to 93 years, mean = 69.6 years) identified for the study. These patients had hypoglycemia mainly due to excessive use of sulfonylureas or insulin. There was a diabetic history in 182 patients (79.83%). Other primary etiologies of acute hypoglycemia were sepsis in 13 (5.70%), and extensive liver disease in 13 (5.70%). This study indicates that good diabetic control can dramatically decrease the number of episodes of acute hypoglycemia in Taiwan. For acute hypoglycemic patients without a diabetic history, the possibility of sepsis or extensive liver disease is a problem.

The limitation of the study is small sample size.

CONCLUSION

Authors found that when hypoglycemia is severe enough to warrant ED visits, it increases the risk of major events and unfavorable outcomes for people with diabetes. This is true for both insulin treatment and non-insulin glucose-lowering medications.

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