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ORIGINAL ARTICLE

Impact of Previously Undetected Type 2 Diabetes in Critically ill Patients Admitted in an Intensive Care Unit of a Suburban Hospital in South Bengal

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Background and Aims

Analysis of the glycaemic status of critically ill patients without any prior history of diabetes mellitus admitted in an ICU of a suburban hospital of South Bengal was done to find out the prevalence of the undetected disease. Many previous studies have shown that patients with diabetes have a poor outcome in comparison to non-diabetics. In our present study—a retrospective and non-randomised study, data was collected from patients who were admitted in the above-mentioned setting, and diagnosed with type 2 diabetes for the first time to evaluate its effect on hospital stay and mortality compared to non-diabetic patients. The aim was to impress on more vigilant screening for diabetes in the population studied, so that early detection may help reduction in mortality and reducing the burden of cost of treatment, which is a very important factor for healthcare in a country like India. This would also be helpful in raising the awareness levels among health care providers regarding screening for type 2 diabetes and formulating future recommendations.

Materials and methods

Patients included in this study were adults aged older than 18 years, admitted in ICU, and blood samples were taken at the time of admission for assessment of random blood sugar and HbA1C values along with a detailed background clinical history of the patients. The final diagnosis and number of days needed for treatment as inpatients, along with final outcome (Discharge/Death/Referral to a higher centre) were also noted. The study was done for 3 years (Jan 2016–Dec 2018). All patients' data were collected and stored in the digital database of the hospital along with informed consent during the above period of time.

Results

The data was analysed for the above-mentioned admissions. Only three categories were selected for final diagnosis of the disease (To keep the study uncomplicated due to numerous diagnostic criteria and guidelines abiding them) namely—(a) Septicaemia, (b) Acute coronary syndrome (ACS) and (c) Others, which included any diagnosis other than these two. The results showed that a large number of patients (51.6%) had undiagnosed type 2 diabetes and needed a longer duration of inpatient care with higher mortality when compared to those

Table 1: | Total number of patients (n) = 992 (Data collected—January 2016 to December 2018)

		Number of patients	Percentage
Age (years)	45–65	484	48.79
	66–80	273	27.52
	81 and above	235	23.69
Sex	Male	561	56.55
	Female	431	43.45
Random blood sugar (mg/dl)			
	Less than 200	417	42.03
	201 and above	575	57.97
HbA1C	Less than 6.5%	480	48.39
	6.5–8%	308	31.04
	Above 8%	204	20.57
Final diagnosis	Septicaemia	623	62.80
	ACS	90	9.07
	Others	279	28.13

Outcome	HbA1C		Average Inpatient Stay (days)	Discharge	Death	Referred
Group A	Less than 6.5%	480	Less than 7 days	396	22	62
Group B	6.5–8%	308	7–14 days	194	76	38
Group C	Above 8%	204	More than 14 days	84	88	32

patients who were non-diabetic. Patients were divided in three groups (according to their HbA1C values) Group C had the highest duration of hospital stay and mortality compared to Group B ($p < 0.01$) and Group A ($p < 0.001$) vide Table 1 below. The diagnostic criteria used in the study was those outlined by the ADA for diagnosis of type 2 diabetes. The criteria for diagnosis of ACS and septicaemia were as per the guidelines of ACC/AHA and Sepsis-3 (The third international consensus on definitions for sepsis and septic shock 2016) respectively.

Conclusion

Our study revealed a high prevalence of type 2 diabetes in patients admitted in the ICU who were not diagnosed previously with the disease, having a poor outcome. It also showed that a higher HbA1C level had a clear co-relation with a longer duration of hospital stay and greater mortality. More vigilant screening for diabetes in the population is required for early detection of the disease. This will help in initiating an early management for the same, helping to reduce the burden of cost of treatment and complications causing mortality for them, if they suffer from critical illness.

SUGGESTED READINGS

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