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In Hospital Hypoglycaemia Is Associated With Increased In-Patient Mortality, and Possibly Length of Stay, Among Patients Admitted Into General Ward

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Introduction

Western literature has confirmed the association between hypoglycaemia and increased mortality as well as length of stay(LOS)among hospitalized patients.

Objectives

This retrospective study sought to determine the relationship between hypoglycaemia (spontaneous or drug induced) and inpatient mortality as well as LOS among patients admitted to general wards in a public hospital in Hong Kong.

Methodology

Data for this retrospective study were obtained from electronic databases of patients admitted between 29 November 2012 and 7 February 2013. Patients with ≥1 blood glucose value ≤ 3mmol/l recorded on point-of-care testing (POCT) were considered hypoglycaemia (hypoglycaemic group). They were compared to another group of patients admitted during the same time period with all blood glucose values between 4-8mmol/l (euglycaemic group). A total of 1,215 subjects were analyzed. Independent sample T-test was used for comparison between numeric variables. Chi-square test was employed for comparison between nominal variables. To control for the effect of age on outcome measures between the 2 groups, binary logistic regression was used with death as outcome variable and age as covariate while linear regression used for LOS as outcome variable.

Result

The mean age for both groups were similar (p=0.756). The mean age for the hypoglycaemic group was 73.7+/-14 years (n=124) while that for the euglycaemic group was 73.2+/-14.8 years (n=892). 12.8% of hypoglycaemic subjects died during admission compared to only 5.1% in the euglycaemic group (p=0.02). The average LOS for the hypoglycaemic group was longer than the euglycaemic group, 8.8+/-10.6 days vs 7.9+/-18.9 days. However this did not reach statistical significance (p=0.454). In the binary logistic regression model controlled for age, being in the hypoglycaemic

group remained a significant determinant for death (p=0.045). The hypoglycaemic group was 1.81 times more likely to die during admission (95% Confidence interval 1.0051-3.25) compared to the euglycaemic group after controlling for age. The association between LOS and being hypoglycaemic remained not significant after controlling for age in the linear regression model. In conclusion, in hospital hypoglycaemia is associated with increased in-patient mortality, and possibly LOS, among patients admitted into general ward. Efforts should be made to minimize in-hospital hypoglycaemia. The use of POCT may help to accomplish this goal.