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Hypoglycemia in hospitalized patients in people with diabetes mellitus: Experience from a teaching University hospital in London

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Introduction: Hypoglycaemia, an often neglected problem, is the most common and serious side effect of glucose-lowering therapies. Recurrent hypoglycemic episodes can have far-reaching clinical, social and financial impacts, and is reportedly associated with a six-fold increase in death amongst hospitalized patients^{1,2}. Optimal glycaemic control is an important aspects in the management of patients admitted with diabetes mellitus (Ref). Intense glycaemic control and presence of underlying comorbidity as well as critical condition increases risk of hypoglycemia. Maintaining tight glycaemic control and avoid hypoglycemia is important. Hypoglycemia during hospital admission is not managed appropriately and result in increases length of stay of the patient and adds to the cost.

Aim: We conducted our retrospective observational study to assess 1. Prevalence of hypoglycemia in people admitted with diabetes 2. If hypoglycemia was treated correctly. 2. Treatment modifications in diabetic people experiencing hypoglycemia and 3. Impact of hypoglycemia on length of stay (LOS) in a University Teaching hospital in London.

Method: We conducted a retrospective observational study and collected consecutive centrally recorded capillary blood glucose recordings (point of care testing) of all patients admitted over a two weeks period. We also looked at demographic data, medical history, glucose lowering therapy and treatment of hypoglycemia. We looked at the discharge summaries and looked at LOS of the patients experiencing hypoglycemia.

Result: A total of ?? CBG testings were performed over a two weeks period. A total of ? Hypoglycemic episode were identified. ? Data is excluded from analysis due to incomplete data/lost notes. Over a two weeks period, total of 148 hypoglycemic events were recorded in people with T1DM 7/148(4.7%), 124/148(83.8%) T2DM and 17/148 (11.5%) in secondary diabetes. 65.8% of these were admitted in medical wards, 6.8% in Surgical wards and 7.4% patients were in wards with both medical/surgical patients. 48.6% of the hypoglycemic episode occurred during sleeping hours. Mean BM was 3.38 ± 0.44 mmol/l (mean Standard deviation). 87 % of these were on insulin or insulin mimetics. All hypoglycemia episodes were discovered incidental checking. Management of hypoglycemia was inadequate, did not follow local protocol (treatment given varied between gluogel to juice, coffee and biscuit) and patient remained hypoglycemic for an average of 84.4 ± 75 minutes. Details of hypoglycemia were included in the discharge letter to the primary care physicians in 49/148 (33.1%) cases. Immediate treatment changes following hypoglycemia were made only in only 13.4% of the patients and 60.1% of the times, changes were not communicated to the primary care providers in discharge letter. LOS was 10.7 ± 73.7 days. The LOS is 3 days more than the expected LOS for similar diagnosis. Some patients experience recurrent hypoglycemia. The average number of recurrent episodes was 5. None of the discharge summary included documentation regarding driving status and advice regarding DVLA. Failure to follow the recommended hospital guidelines resulted in hypoglycaemic patients receiving substandard care. Awareness and driving instructions were poorly documented. Management plans were not optimal and not routinely documented. Patients were not seen following a hypoglycaemic episode. Failure to review likely contributed to the high number of recurrent episodes.

Conclusion: Hypoglycaemia management in patients admitted with diabetes mellitus is inadequate, does not follow local protocol, associated with increased length of stay.

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