A Review On The Possible Factors Affecting Hyperglycemia Management During Acute Ischemic Stroke

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Abstract

Hyperglycaemia (HG) are frequently observed in patients admitted to hospital for acute ischemic stroke (AIS) which have been associated with poor clinical outcomes including greater infarct growth and hemorrhagic infarct conversion. HG has been reported to increase tissue plasminogen activator induced symptomatic intracranial haemorrhage (sICH) (Table 1). Insulin therapy to achieve normoglycaemia during the acute phase is associated with better clinical outcomes in other groups of critically ill patients. In contrast, to date, there is no conclusive evidence for the optimal target of blood glucose as well as the optimal strategies to control HG during AIS. In addition to not stratifying patients according to their pre-stroke glycaemic status, differential pathophysiology of insulin regulation related to stress hyperglycaemia in this population during the acute phase are the proposed mechanisms to explain on the inability to demonstrate expected benefit from the insulin therapy. Previous studies reported a few possible factors influencing the hyperglycaemic control during the acute stage which include the variabilities in pharmacokinetic and pharmacodynamic effects of insulin on blood glucose regulation, disease severity, haemoglobin A1c level on admission and nutrition support during the acute care. This review highlights HG management during the AIS and areas of future research in this field.

Conclusion and Recommendations

- A prime importance has been elevated to conduct further elaborative studies by implying different treatment strategies and different glucose targets in diabetic and non-diabetic hyperglycemic patients with acute ischemic stroke.
- Clinical studies are required to evaluate whether early control of hyperglycaemia with insulin in AIS patients reduces risk of sICH post-tPA.


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