

Blood glucose targets: time to think again?



A rethink of blood glucose targets in critically ill patients is needed, according to James S. Krinsley, MD, FCCP, Department of Medicine, Stamford Hospital, writing in an editorial in *Chest*.

Krinsley outlines the take-home points from the observational multicentre study by Hersh et al. that analysed outcomes for 1895 medical and surgical cardiac patients treated with a validated insulin administration algorithm, comparing two targets: 80 to 110 mg/dL vs 90 to 140 mg/dL. The study found lower mortality in patients treated with the 80 to 110mg/DL target (Hersh et al. 2018).

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- Hypoglycaemia is independently associated with an increased risk of death in the critically ill, and has been confirmed from trials and cohort studies. The Hersh study achieved low levels of mean glycaemia and maintained very low rates of hypoglycaemia.
- High time in targeted blood glucose range is independently associated with survival in critically ill patients. The Intermountain study performed 11.8 blood glucose measures per 24 hours.

Glucose control in critically patients has followed the 'one size fits all' principle. Additional diagnosis-specific data that relates glucose metrics and clinical outcomes is needed, writes Krinsley.

The relationship between preadmission glycaemic status (diabetes vs no diabetes) and clinical outcomes is important, and data suggests that patients with diabetes and poor glycaemic control prior to ICU admission, based on glycosylated haemoglobin levels, have lower mortality with higher ICU glycaemia and that patients with diabetes and good glycaemic control prior to critical illness have lower mortality with lower ICU glycaemia, mirroring patients without diabetes.

Krinsley concludes that wide use of the blood glucose target of 140 to 180 mg/DL reflected the principle of 'first, do no harm'. The study by Hersh and colleagues shows, however, that use of standardised protocols that includes frequent blood glucose measurement can safely achieve 'tight' and 'moderately tight' levels of mean ICU glycaemia.

"Optimal glucose control includes safety (low rates of hypoglycemia) and efficacy (appropriate BG targets based on patient characteristics). These principles are achievable and should prompt reassessment of BG targets in the critically ill", concludes Krinsley.

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