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Performance of glycemic control protocol and virtual trial   (Article)

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Abstract

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Model-based glycemic control offers direct management of patient-specific variability and better adaptive control. Implementation of the model-based glycemic control has the potential to reduce hyperglycemia episodes, mortality and morbidity as seen in some successful TGC. The design of any TGC must consider not only the glycemic target range but also safety and efficacy of the insulin therapy. This paper presents the evaluation of glycemic control protocol adapted in the ICU of Tengku Ampuan Afzan Hospital. Virtual trials method is used to simulate the controller algorithm on a virtual patient with feed variation factor. Data from actual clinical and the virtual trial are compared to analyze the protocol performance concerning blood glucose outcome and insulin efficacy. A stochastic model is also used to indicate metabolic response and metabolic variation of the cohort. © 2017 American Scientific Publishers All rights reserved.

Author keywords

Glycemic control   Intensive care unit   Virtual trial

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