Efficacy and Safety of SPRINT and STAR Protocol on Malaysian Critically-Ill Patients

By: Ahmad, N (Ahmad, Nurhamid)  1; Razak, N (Razak, Normy)  1; Jamaluddin, U (Jamaluddin, Ummu)  2; Suhaimi, F (Suhaimi, Fatimah)  3; Pretty, C (Pretty, Christopher)  4; Chase, G (Chase, Geoffrey)  4; Ralib, A (Ralib, Azrina)  5; Noor, BM (Noor, Basri Mohd)  5

2016 IEEE EMBS CONFERENCE ON BIOMEDICAL ENGINEERING AND SCIENCES (IECBES)
Book Group Author(s): IEEE
Book Series: IEEE EMBS Conference on Biomedical Engineering and Sciences
Pages: 370-375
Published: 2016
Document Type: Proceedings Paper

Abstract

Intensive care unit patients may have a better glycaemic management with the right control protocol. Results of virtual trial performance on Malaysian critically-ill patients adopting a model-derived and model-based control protocol known as SPRINT and STAR are presented in this paper. These ICU patients have been treated by intensive sliding-scale insulin infusion. The effectiveness and safety of glycaemic control are then analysed. Results showed that patient safety improved by 83% with SPRINT and STAR protocol as the number of hypoglycaemic patients significantly reduced (BG<2.2 mmol/L). Percentage of time within desired bands and median BG improves in both SPRINT and STAR. However, the improvements are associated with higher number of BG measurements (workload).

Keywords

Author Keywords: model-based protocol; hyperglycaemia; ICU patients

Author Information

Reprint Address: Razak, N (reprint author)

Addresses:

1. Unv Tenaga Nas, Coll Eng, Selanger, Malaysia
2. Univ Malaysia Pahang, Coll Eng, Pahang, Malaysia
3. Univ Sains Malaysia, Adv Med & Dent Inst, George Town, Malaysia
4. Univ Canterbury, Ctr Bioeng, Christchurch, New Zealand
5. Int Islamic Univ Med, Kulliyah Med, Pahang, Malaysia

E-mail Addresses: normyrazak@uniten.edu.my

Publisher

IEEE, 345 E 47TH ST, NEW YORK, NY 10017 USA

Categories / Classification

Research Areas: Engineering
Web of Science Categories: Engineering, Biomedical
Stress hyperglycaemia and increased risk of death after myocardial infarction in patients with and without diabetes: a systematic overview

By: Capes, SE; Hunt, D; Malmberg, K; et al.

LANCET Volume 355 Issue 9206 Pages: 773-778 Published: MAR 4 2000

Times Cited: 1,235

2. Title: [not available]

By: McCowen, K. C.; Malhotra, A.; Bistrian, B. R.

STRESS-INDUCED Volume: 17 Issue: 1 Published: 2001

Times Cited: 1