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Insulin sensitivity and blood glucose level of sepsis patients in the intensive care unit (Conference Paper)

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Abstract

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Sepsis and hyperglycemia are highly associated with increases in mortality rates, particularly in the critically ill patients. Sepsis diagnosis has been proven challenging due to delay in getting the blood culture results. Thus, often clinical experiences overrule the protocol to prevent the worsening outcome of the patients. In some cases, the erroneous clinical judgement cause antibiotic resistance and even adverse clinical outcomes. This paper investigates the correlation between two parameters; insulin sensitivity and blood glucose level among sepsis patients. The blood glucose level is measured at the bedside during the patient's stay, whereas insulin sensitivity is obtained using the validated glucose - insulin model. Thus, the insulin sensitivity is a specific parameter of the patient, unregimented of the protocol given to the patient. The same parameters, blood glucose and insulin sensitivity, are also compared to the non- sepsis patients to establish a relationship that can be used for sepsis diagnosis. Given the availability of these two parameters that can be captured rapidly and instantly, a significant relationship can, therefore, help clinicians to identify sepsis at an early stage without second-guessing. © 2018 IEEE.

SciVal Topic Prominence ⓘ

Topic: Insulin | Insulin Resistance | intravenous glucose

Prominence percentile: 79.774 ⓘ

Author keywords

Glycemic control ICU Insulin sensitivity Sepsis

Indexed keywords

Engineering controlled terms: Biomedical engineering Blood Diagnosis Glucose Insulin

Engineering uncontrolled terms: Antibiotic resistance Blood glucose level Clinical experience Clinical outcome Critically-ill patients Glycemic control Insulin sensitivity Sepsis

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References (17)

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- 1 Tai, L.L., Lim, C.H., Mohd Nor, M.R., Ismail, N.I., Wan Ismail, W.N. Malaysian Registry of Intensive Care 2016 report (2017) *Malaysian Registry of Intensive Care* September
- 2 Hawiger, J., Veach, R.A., Zienkiewicz, J. New paradigms in sepsis: From prevention to protection of failing microcirculation ([Open Access](#)) (2015) *Journal of Thrombosis and Haemostasis*, 13 (10), pp. 1743-1756. Cited 36 times. www.blackwellpublishing.com/jth/ doi: 10.1111/jth.13061 [View at Publisher](#)
- 3 Singer, M., Deutschman, C.S., Seymour, C., Shankar-Hari, M., Annane, D., Bauer, M., Bellomo, R., (...), Angus, D.C. The third international consensus definitions for sepsis and septic shock (sepsis-3) ([Open Access](#)) (2016) *JAMA - Journal of the American Medical Association*, 315 (8), pp. 801-810. Cited 3243 times. <http://jama.jamanetwork.com/article.aspx?articleid=2492881> doi: 10.1001/jama.2016.0287 [View at Publisher](#)