

Prognostic importance of lactate level during transfusion

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Abstract

Background: Elevated lactate is a good predictor parameter of tissue hypoperfusion and is well known as a universal risk factor for mortality.

Aim: Evaluation of 24 h variation of lactates values as prognostic indicator of patients admitted to ICU care.

Methods: In this prospective observational study 105 patients were enrolled at ICU care unit of UHC “Mother Theresa”, Tirana during January–December 2015. All patients underwent one or more units of packed red blood cell transfusions in 24 hours based on monitored lactates level at admission time before transfusion, 2 hours and 24 hours after blood transfusions. Inclusion criteria: >18 years old, Hb <9g/dL, lactates >2.5 mmol/L. Exclusion criteria: APACHE score II over 20, cardiac disease and trauma patients. No protocols were used for hemo transfusion trigger; it was based on the clinical judgement.

Results: In the study, 60% were males and 40% females with mean age 49.83 (± 17.4), transfused with 1.97 (± 0.78) units of packed red blood cells. On admission time (before transfusion) 2 hours and 24 hours after transfusion, the obtained results showed these lactate values: pre-transfusion: 2.6 ± 1.17 , 2h post-transfusion: 1.95 ± 1.06 ($p=0.001$) and 24 h post transfusion: 1.35 ± 0.08 ($p=0.001$). So, lactate levels were significantly decreased at first 2 hours after transfusion, Meanwhile, this decrease remained significant (at $p < 0.005$) after 2 and till 24 hours after packed red blood cell transfusion.

Conclusions Lactates are a good prognostic indicator of tissue hypoxia, so that the evaluation and screening of them is very

important also for transfusion decision making after 24 hours admission time.

Image

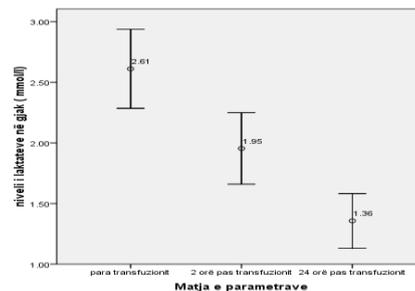


Figure 1 Biu.E, Lactate levels screening: pretransfusion, 2h, and 24h after transfusion time

Recent Publication

1. St John A E, Mc Coy A M, Moyes A G, Guyette F X, Bulger E M and Sayre M R (2018) Prehospital lactate predicts need for resuscitative care in non-hypotensive trauma patients. *Western Journal of Emergency Medicine* 19(2):224-231.
2. Bou Chebl R , E L Khuri C, Shami A, Rajha E, Faris N, Bachir R and Abou Dagher G (2017) Serum lactate is an independent predictor of hospital mortality in critically ill patients in the emergency department: a retrospective study. *Scandinavian Journal of Trauma, Resuscitation And Emergency Medicine* 25(1):69.
3. Guyette F, Suffoletto B, Castillo J L, Quintero J, Callaway C and Puyana J C (2011) Prehospital serum lactate as a predictor of outcomes in trauma patients: a retrospective observational study. *Journal of Trauma and Acute Care Surgery* 70(4):782-786.

4. Jansen T C, Van Bommel J, Mulder P G, Rommes J H, Schieveld S J and Bakker J (2008) The prognostic value of blood lactate levels relative to that of vital signs in the pre-hospital setting: a pilot study. *Critical Care* 12(6):R160.

5. Nake A(2018)Laboratory, society, trauma"vectors"(consequences), parts of non-euclidean triangles, *ijees* 8(4): 791-794.

Biography

M D Ermira Biu completed her Graduation as Physician at Faculty of Medicine of Tirana, Albania in 2011. In 2012, she became a Full Time Lecturer of the Para clinical Department of the Faculty of Technical Medical Sciences of Tirana. She has also developed her skills as an Assistant of Esthetic Surgery. She is a PhD candidate and her research is based on blood and its transfusion products, data collected mostly on ICU care, which most of her publications consists.

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Notes/Comments: