Corrigendum: A Multi-Center Randomized Controlled Study Using ΔP_{CO2}/Ca-v$_{O2}$ as the Target to Guide Early Tissue Hypoperfusion in Sepsis in Plateau Areas

Lianyu Zhang[1], Fabin Zhang[2]*, Huanying Bai[1], Huibin Yun[1], Zhao Zheng[1], Shuncai Liu[1], Shenghua A[1], Zhongshan Shi[3], Yuhai Hu[3]

[1]Department of Critical Care Medicine, The Third People's Hospital of Xining, Xining 810005, Qinghai Province, China
[2]Department of Public Health, Medical College of Qinghai University, Xining 810016, Qinghai Province, China
[3]Department of Critical Care Medicine, Golmud People's Hospital, Golmud 816099, Qinghai Province, China

Corresponding author: Fabin Zhang, qhmczfb@126.com

Correction

The abstract and the conclusion in the original publication (https://www.doi.org/10.26689/jcnr.v8i1.5944) have a typographical error. All instances of "> 1.84" (found in the abstract and conclusion) should be corrected to "< 1.84."

The correct abstract is as follows:

Abstract: *Objective:* To explore the value of using the venous-arterial carbon dioxide partial pressure difference and the arterial-venous oxygen content difference ratio (ΔP_{CO2}/Ca-v$_{O2}$) as targets to guide early tissue hypoperfusion in sepsis in plateau areas. *Methods:* 90 sepsis patients admitted to the Third People's Hospital of Xining and Golmud People's Hospital from June 2017 to December 2022 were selected as the research subjects, and they were divided into the Scv$_{O2}$ (central venous oxygen saturation) group and the ΔP_{CO2}/Ca-v$_{O2}$ group, with 45 cases in each group. The two groups were treated with early shock resuscitation according to different protocols. The hemodynamic characteristics of the two groups of patients before and after resuscitation were observed, and the volume responsiveness was evaluated. The ROC (receiver operating characteristic) curve was used to analyze the significance of ΔP_{CO2}/Ca-v$_{O2}$, Scv$_{O2}$, lactate, lactate clearance, and urine output in evaluating patient prognosis and the correlation between ΔP_{CO2}/Ca-v$_{O2}$ and the above indicators was explored. *Results:* Compared with before resuscitation, after fluid resuscitation, the heart rate (HR), mean arterial pressure (MAP), central venous pressure (CVP), cardiac index (CI), lactate, lactate clearance rate, and urine output of the two groups of patients were significantly improved ($P < 0.05$); in terms of therapeutic effect, the 28-day mortality rate, 6-hour fluid balance, and lactic acid clearance of the ΔP_{CO2}/Ca-v$_{O2}$ group were better than the Scv$_{O2}$ group. The ROC characteristic curve showed that the ΔP_{CO2}/Ca-v$_{O2}$ value can effectively predict the prognosis of patients (AUC = 0.907, sensitivity was 97%, specificity was 72.4%, and critical value was 1.84). ΔP_{CO2}/Ca-v$_{O2}$ significantly correlated with Scv$_{O2}$, lactic acid, and lactic acid clearance rate. *Conclusion:* The ΔP_{CO2}/Ca-v$_{O2}$ value can be used to guide fluid resuscitation in early hypoperfusion in sepsis in plateau areas, improve patients' hemodynamics, reduce lactate indicators, and increase urine output. ΔP_{CO2}/Ca-v$_{O2}$ level < 1.84 can effectively improve patient prognosis.

The corrrect conclusion is as follows:

5. Conclusion

In summary, $\Delta P_{CO2}/Ca\text{-}v_{O2}$ value can guide fluid resuscitation for early hypoperfusion in sepsis in plateau areas. At the same time, combined with the changing direction of blood lactate levels, it can improve patients' hemodynamics and urine output and reduce lactate index, $\Delta P_{CO2}/Ca\text{-}v_{O2}$ level < 1.84 can effectively improve patient prognosis.

However, this study has certain shortcomings. Firstly, this study only included patients from plateau areas and failed to compare $\Delta P_{CO2}/Ca\text{-}v_{O2}$ between patients from plain areas, sub-plateau areas, and plateau areas. Secondly, it only observed a single indicator as a sign of tissue hypoperfusion; we will observe the combination of different indicators in the later stage and use them as effective indicators to judge the patient's tissue perfusion, which may benefit patients more. Lastly, the survival rate of patients in the $\Delta P_{CO2}/Ca\text{-}v_{O2}$ group did not increase significantly. Specifically, the reasons and improvement measures still need to be studied with a large sample size.

Online publication: March 19, 2024