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Response to letter to the editor: Fluid volume, fluid balance and patient outcome in severe sepsis and septic shock: A systematic review



To the Editor,

We are grateful to Jiarong Ye and colleagues for the remarkable questions forwarded on our article, fluid volume, fluid balance and

patient outcome in severe sepsis and septic shock: a systematic review [1]. The letter highlighted four questions.

First, the where about of inclusion and exclusion criteria in the registered protocol. The registration of this review was done at PROSPERO (Registration number: CRD42017079560). The PROSPERO registration system divides the inclusion and exclusion criteria into the following parts: condition or domain being studied, participants/population, intervention(s)/exposure(s), comparator(s)/control, type of studies to be included and main outcome. In our opinion, this is the best way to clearly state the inclusion and exclusion criteria. Moreover, the points we mentioned under the eligibility criteria are the mirror images of the registered protocol.

Second, the article did not consider the recent sepsis and septic shock definitions. The third international consensus definition for sepsis and septic shock considers the previous model misleading

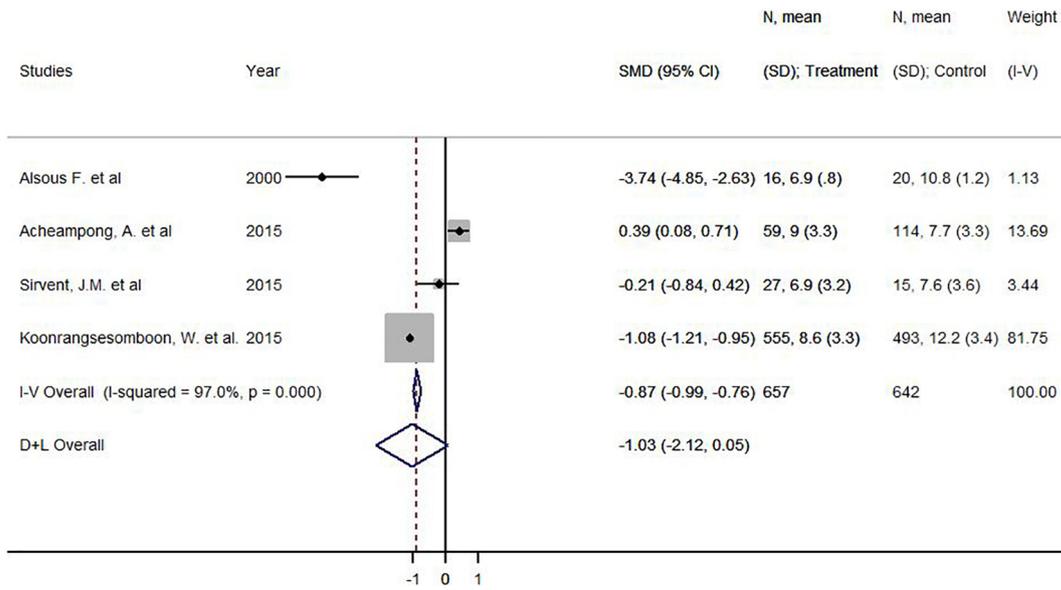


Fig. 1. Standard mean difference in SOFA score between survivors and non-survivors

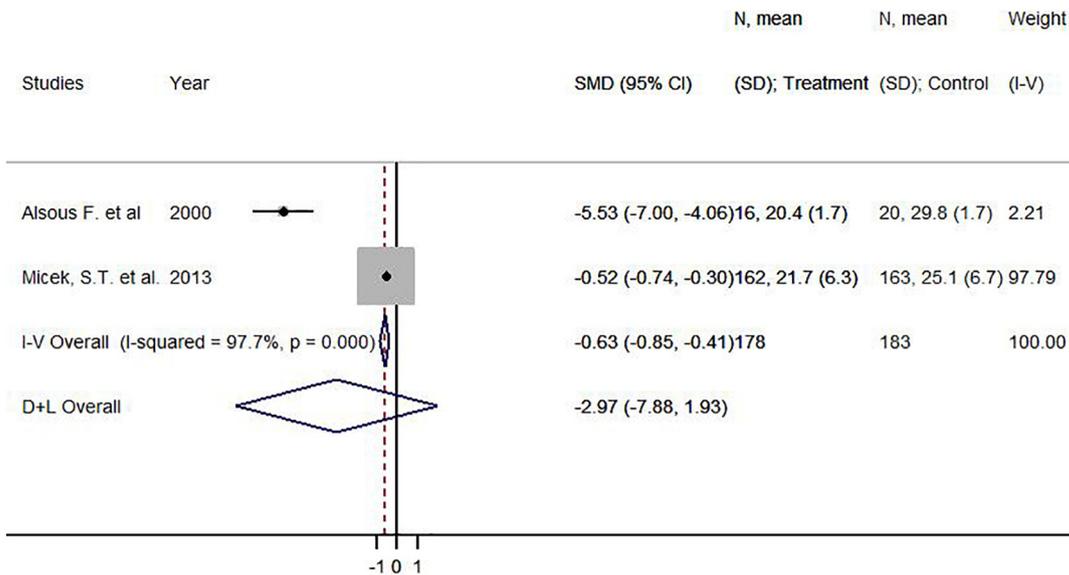


Fig. 2. The standard mean difference in APACHE-II score between survivors and non-survivors

and the term severe sepsis unnecessary [2]. However, almost all the reviewed articles were conducted based on the definition by the Surviving Sepsis Campaign [3], even an article published after the publication of the recent definition used the previous definition [4]. Therefore, we preferred to follow the definition by the Surviving Sepsis Campaign [3].

Third, the inclusion of APACHE-II and SOFA score in the analysis. We fully agree with this comment. Thus, we analyzed the standard mean difference (SMD) in SOFA score for the survivors and non-survivors of severe sepsis and septic shock based on four studies which reported the mean and standard deviation for SOFA score for the two groups [5-8]. The SMD was statistically non-significant in random effects model (SMD: -1.03; 95% CI: -2.12,0.05; I²:97.0%) (Fig. 1). Likewise, we calculated the SMD for APACHE-II based on two studies that reported the mean and standard deviation [6,9] and the SMD was statistically non-significant (SMD: -2.97; 95% CI: -7.88,1.93; I²:97.7%) (Fig. 2). Therefore, the inclusion of the scores might have changed the aesthetic value of the paper but not the final outcome.

Fourth, subgroup analysis. Despite our plan to do subgroup analysis, we found only four articles for the meta-analysis. It was not possible to perform subgroup analysis with this number of articles. Therefore, we exempted our plan. In conclusion, the fluid therapy in sepsis and septic shock is still contentious. We highly recommend randomized trials to standardize the existing protocols.

Ethical approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of supporting data

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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