Category :**Sepsis/septic shock: management**

A233 - ***Mortality in septic shock patients with persistent tachycardia treated with short-acting betablockers: a meta-analysis of randomized controlled trials.***

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Introduction:

Treatment with short-acting betablockers in septic patients remains controversial as recent studies [1-3] indicated diverging results. We aimed to evaluate effects of treatment with short-acting betablockers on mortality in adult septic shock patients with persistent tachycardia.

Methods:

Data search included PubMed, Web of Science, and the Cochrane Library. A meta-analysis of all eligible studies was performed in accordance with the PRISMA statement. Only randomized controlled studies providing valid classifications of septic shock and intravenous treatment of short-acting betablockers were included. All available data was analyzed comprehensively, with short-term mortality serving as the primary outcome, which contained the 28-day mortality [1-2] and the hospital mortality [3]. Sensitivity analyses were performed regarding potential substance related effects as well as biological heterogeneity (age).

Results:

A total of 7 studies including 810 patients fulfilled the predefined criteria and were analyzed. The analysis of the short-term mortality suggested a significant reduction in patients who received short-acting betablockers. (Risk difference, -0.11 [95% CI, -0.23 to 0.00]; p=0.05; p for Cochran Q=0.0005; I2=75%; Figure 1.). Notably, one study [3] only reported the hospital mortality. Subgroup analysis on substance related effects indicated no significant subgroup difference (p=0.16). Finally, analysis on potential biological heterogeneity (age) did not reveal a significant effect either (p=0.20). Besides considerable statistical heterogeneity, no visual sign of publication bias was observed.

Conclusion:

The administration of short-acting betablockers might reduce the short-term mortality in septic shock patients with persistent tachycardia. Future studies may be required to define subgroups who could benefit from this treatment.

References:

1. Morelli et al. JAMA 310:1683-1691, 2013
2. Whitehouse T. et al. JAMA 330:1641-1652, 2023
3. Cocchi et al. Schock 57:508-517, 2022

Image :

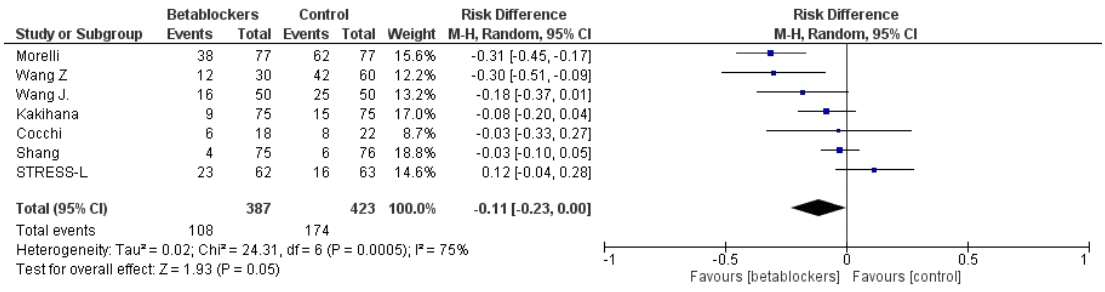

Figure 1: Short-term mortality, Risk difference, Betablockers treatment vs. Control; M-H: Mantel-Haenszel, CI: confidence interval.